

## Daniel Pressnitzer

Born 25 August 1971, Toulouse, France.  
<http://audition.ens.fr/dp/>

### Current position

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CNRS research scientist (DR2).  
Team Leader, “Audition: Psychophysique, Modélisation, Neurosciences”.  
UMR 8248 CNRS & Ecole normale supérieure.  
Address: ENS, 29 rue d’Ulm, 75005 Paris, France.

### Previous positions

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- 2004-2014: Research scientist and team leader (2008-), Laboratoire de Psychologie de la Perception, UMR 8115 CNRS & Université Paris Descartes & Ecole normale supérieure.
- 2000-2004: Research scientist, CNRS, Institut de Recherche et Coordination Acoustique Musique (Ircam), Paris, France.
- 1999-2000: Post-doctoral research associate, Wellcome Trust, The Physiological Laboratory, Cambridge University, UK. With I.M. Winter.
- 1998-1999: Post-doctorate, Fyssen Foundation, Centre for the Neural Basis of Hearing, Cambridge University, UK. With R.D. Patterson.

### Degrees

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- 2009: Habilitation à Diriger des Recherches, École normale supérieure, Paris.
- 1994-1998: PhD, Université Pierre et Marie Curie, Paris. Summa cum laude.
- 1997-1998: MSc from Université Pierre et Marie Curie. Honours.
- 1990-1993: Engineering degree from the Ecole Nationale Supérieure d’Ingénieurs en Constructions Aéronautiques (Ensica), Toulouse. Honours.

### Awards

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- 2010: Fellow of the Acoustical Society of America.
- 2010: Prime pour l’Excellence Scientifique, CNRS.
- 1999: Yves Rocard young researcher award, French Society for Acoustics (SFA).

### Grants

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*The \* symbols indicate the projects where I am/was project leader.*

- 2012-2017: European Research Council (ERC) Advanced grant “The Adaptive Auditory Mind (ADAM)”.  
Co-investigator with S. Shamma.
- 2012-2015: ANR “Extremely Long-Term Memory Acquisition (ELMA)”.  
Coll. S. Thorpe, CNRS, Toulouse.
- 2012-2013: Contrat industriel Fondation Pierre Gilles de Gennes “Auditory sketches as sparse representations of speech and music: Applications to fingerprinting and priming”.\*  
Coll. L. Daudet, ESPCI, Paris.

- 2012-2014: High Council for Scientific and Technological Cooperation between France-Israel, “The sample-and-hold model of hearing (SHH)”.  
Coll. I. Nelken, Hebrew University, Jerusalem.
- 2011-2013: PEPII Mathematics/Biology, “Scattering transforms and auditory perception.”  
Coll. S. Mallat, Ecole Polytechnique, Palaiseau.
- 2010-2013: ANR “Learning and Enhancement in Auditory Perception”. \*  
Coll. L. Demany, CNRS, Bordeaux.
- 2010-2015: ERASMUS MUNDUS project, EU/Canada/USA, “Auditory Cognitive Neuroscience Network”.
- 2010-2012: Research grant, Fondation Pierre Gilles de Gennes pour la Recherche. \*  
Coll. L. Daudet, ESPCI, Paris & C. Suied, ENS.
- 2010-2012: Research grant from the audiologist’s network Groupement Entendre. \*
- 2010-2011: Chaire Blaise Pascal, for a 1-year stay of Pr S. Shamma in my team.
- 2009-2010: Royal Society travel grant ENS/University College London.  
Coll. D. McAlpine, UCL, London, UK.
- 2008-2011: ANR “Multistability in speech and audition”. Coll. J.L. Schwartz, Grenoble.
- 2007-2012: NTT research grant. Coll. M. Kashino, Atsugi, Japan.
- 2006-2009: ANR “Hearing in Time”. Coll. S. Thorpe, Toulouse. \*
- 2005: Association Franco-Israélienne pour la Recherche en Neurosciences.  
Coll. I. Nelken, HU, Jerusalem.
- 2004-2007: European project “From Sense to Sound, From Sound to Sense”, 6th Framework Program, FET Open, contract for Coordination Action.
- 2001-2004: CNRS ACI grant from the interdisciplinary program “Cognition and information processing”. \*

## Teaching

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Teaching of auditory perception at Master’s level (approx. 60h/year):

- Coordinator of the teaching unit “Auditory Perception and Cognition” for the Master de Sciences Cognitives (ENS/EHESS/Université Paris Descartes).
- Coordinator of the teaching unit “Music Perception and Cognition” for the Master Acoustics, Signal Processing and Computer science applied to Music (Université Pierre et Marie Curie & Ircam).
- Coordinator of the teaching unit “Psychoacoustics” in the Master of Acoustics, Université du Maine, Le Mans, France.
- Teaching in the Institut Supérieur du Numérique (ISEN), Lille, France.

Invited lecturer:

- 2013 : Invited lecturer, congrès de la Société Française d’Audiologie, Strasbourg, France.
- 2012 : Keynote address, 11<sup>ème</sup> congrès Français d’acoustique (CFA), Nantes, France.
- 2009: Collège de France, Paris. Invited by Pr C. Petit.
- 2009-2010: NSF Neuromorphic engineering workshop, Telluride, USA.
- 2007: Spring School, Hanse Institute of Advanced Studies, Delmenhorst, Germany.

## Supervision and Mentoring

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- Supervision of 18 MSc or equivalent (7 international).
- Supervision of 4 PhDs (2 international; defended: 2 in 2010, Summa cum laude, in 2013, Summa cum laude).
- Recruited 6 post-doctoral fellows (5 international, current collaborator: 1)
- 12 thesis committees (France 9, UK 2, Italy 1).

## Refereeing

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Reviewing of research articles (~20 per year) for:

- Journal of the Acoustical Society of America
- Hearing Research
- Acta Acustica united with Acustica
- Attention, Perception, and Psychophysics
- Music Perception
- Developmental Science
- Psychological Science
- Brain Research
- Neuroscience Letters
- Journal of Neurophysiology
- Journal of Neuroscience
- Journal of Neuroscience Methods
- Journal of Computational Neuroscience
- Journal of Cognitive Neuroscience
- PLoS Computational Biology
- Current Biology
- Neuron
- Trends in Cognitive Sciences
- Review Editor for Frontiers in Psychological Science

Grant proposals evaluations for :

- Agence Nationale de la Recherche (ANR, France)
- National Science Foundation (NSF, USA)
- French Ministry of Research, international programs
- Fonds Québécois de la Recherche Nature et Technologies (Canada)

Laboratory evaluation for:

- Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur (AERES, France).

## Organisation and co-organisation of conferences

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- 2013: Sensory perception: How the past affects the present. ENS, Paris.
- 2012: Mathematical models of sound analysis, Institut des Hautes Etudes Scientifiques, Gif-sur-Yvette.
- 2012: New ideas in models of hearing impairment, ENS, Paris.
- 2010: Auditory features workshop, ENS, Paris.
- 2008: Special session on Integrated Approaches to Auditory Scene Analysis, 155th Meeting of the Acoustical Society of America - Acoustics'08, Paris.
- 2008: International workshop on "Perceptual Bistability in Audition and Vision", ENS, Paris.
- 2008: French-Israeli workshop on "Hierarchies in Hearing", ENS, Paris.

- 2006: International workshop on “New Ideas in Hearing”, ENS, Paris.  
2003: 13<sup>th</sup> International Symposium on Hearing (ISH), Dourdan.

### **Administrative and scientific responsibilities**

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- 2008- : Team leader, “Audition: Psychophysique, Modélisation, Neurosciences”.  
Coordination and scientific animation of a CNRS research team located at  
Ecole normale supérieure, Paris. About 4 PIs, 20 members (see webpage).
- 2013-2014: ANR (French granting agency) evaluation committee.
- 2014- : Coordination of the Neuroscience track, Master de sciences cognitives  
ENS/EHESS/Paris Descartes
- 2012-2013: Member of the steering committee, chair of the Auditory sub-committee,  
DEFI-SENS, CNRS coordinated action on sensory deficits.
- 2010- : Associate member, Laboratoire Européen Associé FILN (CNRS – Hebrew  
University, Jerusalem). Local coordinator for ENS.
- 2008-2012 : Elected member, Acoustical Society of America, Psychological &  
Physiological Acoustics Technical Committee.
- 2008-2012 : Elected member, Groupe Perception Sonore, Société Française d’Acoustique.
- 2006- : Member of two selection committees (7-16 ENS, Comité selection MC  
Université Paris Descartes).
- 2004- : Co-founder of the Equipe APMN. Member of the board of the  
Département d’études cognitives, Ecole normale supérieure, Paris.

### **Other**

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- 2008: Consultant for Arkamys (audio technologies).
- 2007: Exhibition on Perceptual Illusions, Palais de la Découverte, Paris, France.
- 2005-2006: Consultant for Advanced Bionics (music perception with a cochlear implant).
- 1999: Development of a real-time auditory neurophysiology platform.

## Publications list

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The \* symbols indicate supervised students, PhDs or post-doctoral associates.

### Peer-reviewed journals

- Kondo, H.M, Toshima, I., Pressnitzer, D., & Kashino, M. (2014). Probing the time-course of head-motion cues integration during auditory scene analysis. *Frontiers in Neuroscience*, in press.
- Kumar, S., Bonnici, H.M., Teki, S., Agus, T.R., Pressnitzer, D., Maguire, E.A., & Griffiths, T.D. (2014). Representations of specific acoustic patterns in the auditory cortex and hippocampus. *Proceedings of the Royal Society B*. Last revision.
- Chambers\*, C., & Pressnitzer, D. (2014). Perceptual hysteresis in the judgment of auditory pitch shift. *Attention, Perception, & Psychophysics*, E-pub ahead of print.
- Cousineau, M., Carcagno, S., Demany, L., & Pressnitzer, D. (2014). What is a melody? On the relationship between pitch and brightness of timbre. *Frontiers in Systems Neuroscience*, 7:127. doi: 10.3389/fnsys.2013.00127
- Suied, C., Agus, T.R., Thorpe, S., Mesgarani, N., Pressnitzer, D. (2014) Auditory gist: Recognition of very short sound from timbre cues. *Journal of the Acoustical Society of America*, 135, 1380-1391.
- Agus\*, T.R., & Pressnitzer, D. (2013). The detection of repetitions in noise before and after perceptual learning. *Journal of the Acoustical Society of America*. 134, 464-473.
- Agus\*, T.R., Carrión-Castillo, A., Pressnitzer, D., & Ramus, F. (in press). Perceptual learning of acoustic noise by dyslexic individuals. *Journal of Speech, Language, and Hearing Research*.
- Suied\*, C., Dremeau, A., Pressnitzer, D., & Daudet, L. (2013). Auditory sketches: Sparse representations of sounds based on perceptual models. *Lecture Notes in Computer Science*, 7900, 154-170.
- Suied\*, C., Agus, T.R., Thorpe, S.J., & Pressnitzer, D. (2013). Processing of short auditory stimuli: The Rapid Audio Sequential Presentation paradigm (RASP). *Adv Exp Med Biol*, 787, 443-451
- Agus\*, T.R., Suied\*, C., Thorpe, S.J., & Pressnitzer, D. (2012). Fast recognition of musical sounds based on timbre. *Journal of the Acoustical Society of America*. 131, 4124-4133.
- Hupé, J.M., & Pressnitzer, D. (2012). The initial phase of auditory and visual scene analysis. *Philosophical Transactions of the Royal Society B*, 367 (1591), 942-953.
- Joly, O., Pallier, C., Ramus, F., Pressnitzer, D., Vanduffel, W., & Orban, G.A. (2012). Processing of vocalizations in humans and monkeys: A comparative fMRI study. *Neuroimage*, 62. 1376-1389.
- Joly, O., Ramus, F., Pressnitzer, D., Vanduffel, W., & Orban, G.A. (2012). Interhemispheric Differences in Auditory Processing Revealed by fMRI in Awake Rhesus Monkeys. *Cerebral Cortex*, 22(4), 838-583..
- Kondo, H., Pressnitzer, D., Toshima, I., & Kashino, M. (2012). Effects of self-motion on auditory scene analysis. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 109, 6775-6780. [joint first authorship].

- Maier\*, J.K., Hehrmann, P., Harper, N.S., Klump, G.M., Pressnitzer, D., & McAlpine, D. (2012). Adaptive coding is constrained to midline locations in a spatial listening task. *Journal of Neurophysiology*, 108, 1856-1868.
- Patil, K., Pressnitzer, D., Shamma, S., & Elhilali, M. (2012) Music in our ears: the biological bases of musical timbre perception. *PLoS Computational Biology* 8(11):e1002759.
- Schwartz, J.L., Grimault, N., Hupé, J.M., Moore, B.C.J., & Pressnitzer, D. (2012). Multistability in perception: binding sensory modalities, an overview. *Phil. Trans. R. Soc. B*, 367(1591), 896-905.
- Demany, L., Semal, C., & Pressnitzer, D. (2011). Implicit versus explicit frequency comparisons: Two mechanisms for auditory change detection. *Journal of Experimental Psychology: Human Perception and Performance*, 37, 597-605.
- Pressnitzer, D., Suied, C., & Shamma, S.A. (2011). Auditory scene analysis: the sweet music of ambiguity. *Frontiers in Human Neuroscience*, 5, 158.
- Agus\*, T.R., Thorpe, S.J., & Pressnitzer, D. (2010). Rapid formation of auditory memories: Insights from noise. *Neuron*. 66, 610-618.
- Cousineau\*, M., Demany, L., Pressnitzer, D. (2010). The role of peripheral resolvability in pitch-sequence processing. *Journal of the Acoustical Society of America*. 128: EL 236.
- Cousineau\*, M., Demany, L., Meyer, B., & Pressnitzer, D. (2010). Pitch and loudness sequence perception with a cochlear implant. *Hearing Research*. 269, 34-41.
- Demany, L., Semal, C., Cazalets, J.R., & Pressnitzer, D. (2010) Fundamental differences in change detection between audition and vision. *Experimental Brain Research*. 203, 261-270.
- Gnansia\*, D., Pressnitzer, D., Péan, V., Meyer, B., & Lorenzi, C. (2010). Intelligibility of interrupted and interleaved speech for normal-hearing listeners and cochlear implantees. *Hearing Research*. 265, 46-53.
- Maier\*, J.K., McAlpine, D., Klump, G., Pressnitzer, D. Context effects in the discriminability of spatial cues. (2010). *Journal of the Association for Research in Otolaryngology*. 11, 319-328.
- Cousineau\*, M., Demany, L., & Pressnitzer, D. (2009). What makes a melody: The perceptual singularity of pitch sequences. *Journal of the Acoustical Society of America*. 126, 3179-3187.
- Demany, L., Pressnitzer, D., & Semal, C. (2009). Tuning properties of the auditory frequency-shift detectors. *Journal of the Acoustical Society of America*, 126(3), 1342-1348.
- Ardoit, M., Lorenzi, C., Pressnitzer, D., & Gorea, A. (2008). Investigation of perceptual constancy in the temporal-envelope domain. *Journal of the Acoustical Society of America*, 123(3), 1591-1601.
- Hupé, J. M., Joffo\*, L. M., & Pressnitzer, D. (2008). Bistability for audiovisual stimuli: Perceptual decision is modality specific. *Journal of Vision*, 8(7), Special issue on Perceptual organization and neural computation, 1-15.
- Pressnitzer, D., Sayles, M., Micheyl, C., & Winter, I. M. (2008). Perceptual organization of sound begins in the auditory periphery. *Current Biology*, 18, 1124-1128.

- Widmer, G., Rocchesso, D., Valimaki, V., Erkut, C., Gouyon, F., Pressnitzer, D., et al. (2007). Sound and music computing: Research trends and some key issues. *Journal of New Music Research*, 36(3), 169-184.
- de Cheveigné, A., & Pressnitzer, D. (2006). The case of the missing delay lines: Synthetic delays obtained by cross-channel phase interaction. *Journal of the Acoustical Society of America*, 119(6), 3908-3918.
- Pressnitzer, D., & Hupé, J. M. (2006). Temporal dynamics of auditory and visual bistability reveal common principles of perceptual organization. *Current Biology*, 16(13), 1351-1357.
- Pressnitzer, D., Bestel, J., & Fraysse, B. (2005). Music to electric ears: Pitch and timbre perception by cochlear implant patients. *Annals of the New York Academy of Sciences*, 1060, 343-345.
- Pressnitzer, D., de Cheveigné, A., & Winter, I. M. (2004). Physiological correlates of the perceptual pitch shift for sounds with similar waveform autocorrelation. *Acoustics Research Letters Online*, 5(1), 1-6.
- Verhey, J. L., Pressnitzer, D., & Winter, I. M. (2003). The psychophysics and physiology of comodulation masking release. *Experimental Brain Research*, 153(4), 405-417.
- Meddis, R., Delahaye, R., O'Mard, L., Sumner, C., Fantini, D. A., Winter, I. M., et al. (2002). A model of signal processing in the cochlear nucleus: Comodulation masking release. *Acta Acustica United with Acustica*, 88(3), 387-398.
- Pressnitzer, D., de Cheveigné, A., & Winter, I. M. (2002). Perceptual pitch shift for sounds with similar waveform autocorrelation. *Acoustics Research Letters Online*, 3(1), 1-6.
- Pressnitzer, D., Meddis, R., Delahaye, R., & Winter, I. M. (2001). Physiological correlates of comodulation masking release in the mammalian ventral cochlear nucleus. *Journal of Neuroscience*, 21(16), 6377-6386.
- Pressnitzer, D., Patterson, R. D. & Krumbholz, K. (2001) The lower limit of melodic pitch. *Journal of the Acoustical Society of America*, 109, 2074-84.
- Neuert, V., Pressnitzer, D., Patterson, R. D., & Winter, I. M. (2001). The responses of single units in the inferior colliculus of the guinea pig to damped and ramped sinusoids. *Hearing Research*, 159(1-2), 36-52.
- Krumbholz, K., Patterson, R. D., & Pressnitzer, D. (2000). The lower limit of pitch as determined by rate discrimination. *Journal of the Acoustical Society of America*, 108(3 Pt 1), 1170-1180.
- Pressnitzer, D., Winter, I. M., & Patterson, R. D. (2000). The responses of single units in the ventral cochlear nucleus of the guinea pig to damped and ramped sinusoids. *Hearing Research*, 149(1-2), 155-166.
- Pressnitzer, D., McAdams, S., Winsberg, S., & Fineberg, J. (2000). Perception of musical tension for nontonal orchestral timbres and its relation to psychoacoustic roughness. *Perception & Psychophysics*, 62(1), 66-80.
- Pressnitzer, D., & McAdams, S. (1999). Acoustics, psychoacoustics, and spectral music. *Contemporary Music Review*, 19, 33-60.
- Pressnitzer, D., & McAdams, S. (1999). Two phase effects in roughness perception. *Journal of the Acoustical Society of America*, 105(5), 2773-2782.

## Abstracts or short papers in peer-reviewed journals

- Agus\*, T.R., Jeannou\*, C., & Pressnitzer, D. (2012) Individual differences for pitched features learnt in white noise by musical listeners. *The British Society of Audiology Short papers meeting on Experimental Studies of Hearing and Deafness*, Keele, UK.
- Chambers\*, C., Akram, S., Shamma, S., & Pressnitzer, D. (2012). The influence of perceptual organization on an auditory context effect. *Journal of the Acoustical Society of America*, 131, 3230.
- Agus\*, T.A., & Pressnitzer, D. (2011). The recognition of tone-clouds: learning observed with complex parametrically-controlled stimuli. *The British Society of Audiology Short papers meeting on Experimental Studies of Hearing and Deafness*, Nottingham, UK.
- Agus\*, T.R., & Pressnitzer, D. (2010). Deep frozen noise: Long-term learning in adverse conditions. *International Journal of Audiology*. In press.
- Chambers\*, C., Park-Thompson\*, V., & Pressnitzer, D. (2010). Biasing perception of ambiguous pitch stimuli. *International Journal of Audiology*. In press.
- Cousineau\*, M., Demany, L., Meyer, B., & Pressnitzer, D. (2010). Pitch-sequence processing for normal-hearing listeners, cochlear implant users, and noise-vocoder simulations. *International Journal of Audiology*. In press.
- Jardine\*, G., & Pressnitzer, D. (2010). Acoustic cues to disambiguate questions and statements in noise-vocoded speech. *International Journal of Audiology*. In press.
- Agus\*, T.R., & Pressnitzer, D. (2009). Implicit learning of noise. *International Journal of Audiology*. In press.
- Pressnitzer, D. (2009). Subcortical contributions to the temporal dynamics of auditory streaming. *International Journal of Audiology*. In press.
- Cousineau\*, M., Pressnitzer, D., & Demany, L. (2008). From sounds to melodies: Memory for sequences of pitch and loudness. *Journal of the Acoustical Society of America*, 123(5), 3562. [Best student paper award].
- Cusack, R., & Pressnitzer, D. (2008). Auditory scene analysis emerges from a distributed yet integrated network. *Journal of the Acoustical Society of America*, 123(5), 3052.
- Demany, L., Pressnitzer, D., & Semal, C. (2008). On the binding of successive tones: Implicit versus explicit pitch comparisons. *Journal of the Acoustical Society of America*, 123(5), 3049.
- Elhilali, M., Pressnitzer, D., & Shamma, S. (2006). Models of musical timbre using cortical spectro-temporal receptive fields and temporal codes. *Journal of the Acoustical Society of America*, 120, 3085.
- Pressnitzer, D., Joffo\*, L. M., & Hupe, J. M. (2007). Bistability for auditory, visual, and audio-visual stimuli: Evidence for distributed neural mechanisms of perceptual organization. *Hearing Research*, 229, 246.
- Pressnitzer, D., & Hupé, J. M. (2005). Is auditory streaming a bistable percept? *Acta Acustica united with Acustica*, 91(S1), S102.
- Pressnitzer, D., Tardieu\*, J., Ragot, R., & Baillet, S. (2004). Mechanisms underlying the continuity illusion. *Journal of the Acoustical Society of America*, 115(5), 2460.
- Patterson, R. D., Krumbholz, K., & Pressnitzer, D. (2002). The existence region for melodic pitch and computational models. *Journal of the Acoustical Society of America*, 111(5), 2416.



- Kult, A., Rupp, A., Pressnitzer, D., Scherg, M., & Supek, S. (2003). Meg study on temporal asymmetry processing in the human auditory cortex. *NeuroImage*, 19(2).
- Pressnitzer, D., Winter, I. M., & Patterson, R. D. (2000). A hierarchy of sensitivity to temporal asymmetry: Cochlear nucleus responses to damped and ramped sinusoids. *British Journal of Audiology*, 34(2), 88-89.
- Krumbholz, K., Patterson, R. D., & Pressnitzer, D. (2000). The lower limit of pitch as determined by rate discrimination. *Journal of the Acoustical Society of America*, 108(3 Pt 1), 1170-1180.
- Winter, I. M., Pressnitzer, D., & Meddis, R. (2000). Across frequency processing in the ventral cochlear nucleus: Searching for a physiological substrate of comodulation masking release. *British Journal of Audiology*, 34(2), 89-90.
- Pressnitzer, D., Patterson, R. D., & Krumbholz, K. (1999). The lower limit of melodic pitch with filtered harmonic complexes. *Journal of the Acoustical Society of America*, 105, 1052.
- Misdariis N., Smith B., Pressnitzer D., Susini P., & McAdams S. (1998). Validation of a multidimensional distance model for perceptual dissimilarities among musical timbres. *Journal of the Acoustical Society of America*, 103 : 3005.
- McAdams S., Pressnitzer D. (1996). Psychoacoustic factors to musical tension in Western nontonal music. *International Journal of Psychology*, 3(3-4): 148.

### **Non peer-reviewed journals**

- Pressnitzer, D., Suied, C., Agus, T.R. (2013). La reconnaissance du timbre des sons. *Acoustique et Techniques*, sous presse.
- Pressnitzer, D. (2012). Des illusions sonores pour étudier l'audition. *Cerveau & Psycho - L'Essentiel*. 12, 48-54.
- Pressnitzer, D. (2008). L'organisation des sons, de l'illusion à la perception. *Pour la Science*, 373, 116-123. [French edition of Scientific American, special issue on Auditory perception and Music].
- Pressnitzer, D. (2006). La perception auditive. Entendre et comprendre. *Découvertes, revue du Palais de la découverte*, 341, 33-40.
- Canévet, G., Demany, L., Grimault, N., McAdams, S., & Pressnitzer, D. (2005). La psychoacoustique: Science de l'audition, science du son. *Acoustique et Techniques*, 42-43, 28-34.

### **Peer-reviewed proceedings**

- Agus\*, T.R., Suied\*, C., Thorpe, S.J., & Pressnitzer, D. (2010). Characteristics of human voice processing. *IEEE International Symposium on Circuits and Systems*. 509-512.
- Joly, O., Ramus, F., Pallier, C., Pressnitzer, D., Dupoux, E., Hauser, M. D., et al. (2008). *Functional lateralization in monkey auditory cortex?* 37th annual meeting of the Society for Neuroscience, Washington, USA.
- Elhilali, M., Shamma, S., Thorpe, S. J., & Pressnitzer, D. (2007). *Models of timbre using spectro-temporal receptive fields: Investigation of coding strategies*. 19th International Congress on Acoustics, Madrid, Spain.

- Loiselle\*, S., Rouat, J., Pressnitzer, D., & Thorpe, S. (2005). *Exploration of rank order coding with spiking neural networks for speech recognition*. International Joint Conference on Neural Networks, p. 2076-2080. Montreal, Canada.
- Pressnitzer, D., & Hupé, J. M. (2005). *Is auditory streaming a bistable percept?* Proceedings of Forum Acusticum, Budapest, Hungary.
- Pressnitzer, D., & Gnansia\*, D. (2005). *Real-time auditory models*. Proceedings of International Computer Music Conference, p. 295-298. Barcelona, Spain.
- Pressnitzer, D., Ragot, R., Ducorps, A., Schwartz, D., & Baillet, S. (2004). *Is the continuity illusion based on a change-detection mechanism? A MEG study*. Proceedings of Joint Congress on Acoustics CFA/DAFA'04, p. 589-590. Strasbourg, France.
- Rivenez, M., Gorea A., Pressnitzer, D., Drake C. (2002) *The tolerance window for sequences of musical, environmental and artificial sounds*. Proceedings of the 7th International Conference on Music Perception and Cognition, Stevens C., Burnham D., McPherson G., Schubert, E., Renwick, J. (Eds). Causal Productions : Adelaide, Australie.
- Pressnitzer, D., McAdams S. (1997). *Influence of phase effects on roughness modelling*. Proceedings of the International Computer Music Conference, p 31-34. Thessaloniki, Grèce. [Best student paper award].
- Pressnitzer, D., McAdams S. (1997). *Influence de la phase sur la perception de rugosité sons complexes*. Actes du 4ème Congrès Français d'Acoustique, pages 535-538. Marseille, France.

## Book chapters

- Pressnitzer, D., Agus\*, T.R., Suied\*, C. (2013). Acoustic timbre recognition. In: Jaeger D., Jung R. (Ed.) *Encyclopedia of Computational Neuroscience*: SpringerReference (www.springerreference.com). Springer-Verlag Berlin Heidelberg.
- Suied\*, C., Agus\*, T.R., Thorpe, S.J., & Pressnitzer, D. (2013). Processing of short auditory stimuli: The Rapid Audio Sequential Presentation paradigm (RASP). In Moore, B.C.J, Patterson, R.D., Winter, I.M., Carlyon, R.P., & Gockel, H. (Eds.). *Basic Aspects of Hearing: Physiology and Perception*. (pp. 443-451). New York: Springer.
- Shamma, S., Elhilali, M., Ma, L., Micheyl, C., Oxenham, A.J., Pressnitzer, D., Yin, P., Xu, Y. (2013) Temporal coherence and the streaming of complex sounds. In Moore, B.C.J, Patterson, R.D., Winter, I.M., Carlyon, R.P., & Gockel, H. (Eds.). *Basic Aspects of Hearing: Physiology and Perception*. (pp. 535-543). New York: Springer.
- Englitz, B., Akram, S., David, S.V., Chambers\*, C., Pressnitzer, D., Depireux, D., Fritz, J.B., Shamma, S.A. (2013). Putting the tritone paradox into context: insights from neural population decoding and human psychophysics. In Moore, B.C.J, Patterson, R.D., Winter, I.M., Carlyon, R.P., & Gockel, H. (Eds.). *Basic Aspects of Hearing: Physiology and Perception*. (pp. 157-164). New York: Springer.
- Agus\*, T.R., Beauvais\*, M., Thorpe, S.J. & Pressnitzer, D. (2009). The implicit learning of noise: Behavioural data and computational models. In E. A. Lopez-Poveda, R. Meddis & A. Palmer (Eds.), *Advances in auditory physiology, psychophysics and models*. New York: Springer-Verlag.

- Elhilali, M., Chi, T. S., Pressnitzer, D., & Shamma, S. (2009) Neural basis of timbre of musical instruments. In T. Klouche (Ed.), *Mathematical and computational musicology* (in press). Berlin.
- Krumbholz, K., Patterson, R. D., & Pressnitzer, D. (2001). The perception of periodicity near the lower limit of pitch. In D. J. Breebart, A. J. M. Houtsma, A. Kohlrausch, V. Prijs & R. Schoonoven (Eds.), *Physiological and psychophysical bases of auditory function* (pp. 75-82). Maastricht: Shaker Publishing BV.
- Krumbholz, K., Patterson, R. D., & Pressnitzer, D. (1999). Period difference limens for harmonic complex tones in and below the pitch region. In T. Dau, V. Hohmann & B. Kollmeier (Eds.), *Psychophysics, physiology and models of hearing* (pp. 85-88). Singapore: World Scientific Publishing.
- Meddis, R., Delahaye, R., Fantini, D., Winter, I. M., & Pressnitzer, D. (2001). A model of a brainstem circuit that might be involved in comodulation masking release. In D. J. Breebart, A. J. M. Houtsma, A. Kohlrausch, V. Prijs & R. Schoonoven (Eds.), *Physiological and psychophysical bases of auditory function* (pp. 252-257). Maastricht: Shaker Publishing BV.
- Pressnitzer, D., & Patterson, R. D. (2001). Distortion products and the perceived pitch of harmonic complex tones. In D. J. Breebart, A. J. M. Houtsma, A. Kohlrausch, V. Prijs & R. Schoonoven (Eds.), *Physiological and psychophysical bases of auditory function* (pp. 97-107). Maastricht: Shaker Publishing BV.
- Pressnitzer, D., & McAdams, S. (1999). Summation of roughness across frequency regions. In T. Dau, V. Hohmann & B. Kollmeier (Eds.), *Psychophysics, physiology and models of hearing* (pp. 105-108). Singapore: World Scientific Publishing.
- Pressnitzer, D., & McAdams, S. (1998). Phase effects in roughness perception. In A. Palmer, A. Rees, Q. Summerfield & R. Meddis (Eds.), *Psychophysical and physiological advances in hearing* (pp. 286-292). London: Whurr Publishers.

### **Edited book**

- Pressnitzer, D., de Cheveigné, A., McAdams, S., & Collet, L. (Eds.). (2005). *Auditory signal processing: Physiology, psychoacoustics and models*. New York: Springer.

### **PhD Thesis**

- Pressnitzer, D. (1998). Perception of auditory roughness: from a basic perceptual attribute to the perception of music. Université Paris 6, Paris, supervised by S. McAdams. Félicitations du jury.

### **Invited talks in international and national conferences**

- Pressnitzer, D. (2013). Contexte et mémoire en audition. *Congrès de la Société Française d'Audiologie*, Strasbourg, France.
- Pressnitzer, D. (2013). Adaptive processes in audition. University College London, UK.
- Pressnitzer, D. (2012) The Adaptive Auditory Mind. Keynote address, *Congrès Français d'Acoustique*, Nantes, France.
- Pressnitzer, D. (2012). Implanted prosthetic devices. *DEFI-SENS workshop*, Marseille, France.

- Agus\*, T.A., & Pressnitzer, D. (2011). Rapid auditory learning for meaningless sounds. *ESCOP 2011, 17th Meeting of the European Society for Cognitive Psychology. Special Symposium on Auditory Learning*. San Sebastian, Spain.
- Pressnitzer, D. (2011). Hearing in Time. *Grand Colloque ANR Biologie Santé*. Lyon, France.
- Pressnitzer, D. (2010). Characteristics of Human Voice Processing. *International Symposium on Circuits and Systems (ISCAS, IEEE)*. Paris, France. Session special “Biologically-inspired speech processing”.
- Pressnitzer, D. (2010). A mid-level framework for auditory scene analysis *CogX international conference*. Budapest, Hungary.
- Pressnitzer, D. (2010). Memory for noise. *Gatsby workshop on Computational Audition*. UCL, London, UK.
- Pressnitzer, D. (2010). Memory for noise. *Third France-Israël binational conference in Neuroscience*. Technion, Haïfa, Israël.
- Pressnitzer, D. (2010). Subcortical contributions to auditory scene analysis. *European Winter Conference on Brain Research (EWCBR)*. Special session: “Challenges in sensory representations : the top-down and bottom-up of segregation, abstraction and learning”. Les Deux-Alpes, France.
- Pressnitzer, D. (2010). The perception of pitch sequences by normal hearing listeners and people using a cochlear implant. *Advanced Bionics Music Perception conference*, Budapest, Hungary. [Keynote].
- Pressnitzer, D. (2009). Models for auditory perception. *Neuromorphic cognition engineering workshop*, Telluride, USA.
- Pressnitzer, D. (2009) Auditory scene analysis: using illusions to probe perception. *Wellcome Trust Symposium: Signalling Sound*, Warwick, UK. [Keynote].
- Pressnitzer, D., Sayles, M., Micheyl, C., & Winter I.M. (2009) Neural correlates of the temporal dynamics of auditory scene analysis. *9ème colloque de la Société des Neurosciences*, Bordeaux.
- Pressnitzer, D. (2008). Perception auditive non-verbale chez les personnes normo- et malentendantes, *Deuxième conférence virtuelle Audiologie/Audioprothèse Phonak*.
- Pressnitzer, D. (2008). L'organisation des scènes auditives: des illusions pour mieux comprendre la perception. *Collège National d'Audioprothèse*, Paris. [Plenary].
- Pressnitzer, D. (2008) Universals in Music Perception. *2nd Japanese-French Frontiers of Science*. [Plénière].
- Pressnitzer, D. (2007) Temporal dynamics of auditory scene analysis. *Spring School of the Hanse Institute of Advanced Studies, Neuroscience*, Delmenhorst, Allemagne.
- Pressnitzer, D. (2007) Temporal dynamics of auditory scene analysis. *2<sup>nd</sup> France-Israël Neuroscience Binational conference*. Bordeaux, France.
- Pressnitzer, D. (2007) Méthodes d'évaluation de la perception de la musique. *Première conférence virtuelle Audiologie/Audioprothèse Phonak*.
- Pressnitzer, D. (2006). The perception of pitch and timbre by normally hearing listeners and cochlear implant users. *Bionics Investigators Meeting*, Venise, Italie. [Keynote].

- Pressnitzer, D., Hupé, J. M. (2006). Bistable perception in audition: can it tell us anything about auditory scene analysis? *Computational and systems neuroscience (Cosyne)*, Salt Lake City, USA.
- Pressnitzer, D. (2006). Ecoute musicale et perception de hauteur. *Congrès Français de Phoniatrie*, Paris, France. [Plenary].
- Pressnitzer, D., & Bestel, J. (2005). CI-Music, a set of objective tasks to evaluate pitch and timbre perception in cochlear implant patients. *Bionics European Investigators Conference*, Istanbul, Turquie.
- Pressnitzer, D. (2005). Ecoute musicale et perception de hauteur. *9ème Symposium Entendre*, Cagliari, Italie. [Plenary].
- Pressnitzer, D., & Hupé, J. M. (2005). Is auditory streaming a bistable percept? *Forum Acusticum*, Budapest, Hongrie.
- Pressnitzer, D. (2004) Perception et Cognition Auditive. *Ecole d'été Aconstique et Musique*, Institut Scientifique de Cargèse, Corse.
- Pressnitzer, D., Ragot R., Ducorps A., Schwartz D., & Baillet S. (2004). Is the continuity illusion based on a change-detection mechanism? *Joint Congress on Acoustics CFA/DAGA'04*, Strasbourg, France.
- Pressnitzer, D., & Meddis, R. (2002) Modèles fonctionnels du système auditif périphérique. *Vème congrès de la Société Française d'Audiologie*, Paris, France [Plenary].
- Pressnitzer D., Demany L., & Rupp A. (2002) The perception of frequency peaks and troughs: psychophysical data and functional brain imaging data. *Forum Acusticum*, Sevilla, Spain.
- Pressnitzer D., McKinney M., de Cheveigné A., & Winter I. M. (2002). Pitch perception and the encoding of click trains in the mammalian ventral cochlear nucleus. *Forum Acusticum*, Sevilla, Spain.
- Pressnitzer, D. (2000). Modèles psychoacoustiques et perception de hauteur. *Journées d'Informatique Musicale*, Bordeaux, France.

### **Talks in international conferences, symposia**

- Agus\*, T.R. & Pressnitzer, D. (2012) Tone clouds: learning and models. Status seminar on computational neurosciences & computational cognitive sciences, Jerusalem.
- Agus\*, T.R., de Vries, F. & Pressnitzer, D. (2012) Robust noise recognition despite spectral changes (poster presentation). British Society of Audiology, Short Papers Meeting, Nottingham.
- Agus\*, T.R. & Pressnitzer, D. (2011) The recognition of tone clouds: learning observed with complex parametrically controlled stimuli (poster presentation). British Society of Audiology, Short Papers Meeting, Nottingham.
- Chambers\*, C., Pelofi\*, C. & Pressnitzer, D. (2011). Perception of ambiguous auditory stimuli: Hysteresis and context effects. The Erasmus Mundus Symposium on Auditory Cognitive Neuroscience. Leipzig, Germany.
- Pelofi\*, C., Chambers\*, C. & Pressnitzer, D. (2011). Perception of ambiguous auditory stimuli: Memory and distractors. The Erasmus Mundus Symposium on Auditory Cognitive Neuroscience. Leipzig, Germany.

- Chambers\*, C., & Pressnitzer, D. (2011). The effect of context in the perception of an ambiguous pitch stimulus. 34<sup>nd</sup> MidWinter Meeting of the Association for Research in Otolaryngology, Baltimore.
- Agus\*, T., & Pressnitzer, D. (2010). The timbral features of voices investigated through reaction time data. 10eme Congrès Français d'Acoustique, Lyon, France.
- Chambers\*, C., Parks-Thompson, V., & Pressnitzer, D. (2010). Biasing Ambiguous Pitch Stimuli. 10eme Congrès Français d'Acoustique, Lyon, France.
- Agus\*, T., Beauvais\*, M., Thorpe, S.J., & Pressnitzer, D. (2009). *The implicit learning of noise: Behavioural data and computational models*. 15<sup>th</sup> International Symposium on Hearing, Salamanca, Spain.
- Cousineau\*, M., Demany, L., Meyer, B., & Pressnitzer, D. (2009). *The perception of sound sequences by normal-hearing and cochlear-implant listeners*. 32<sup>nd</sup> MidWinter Meeting of the Association for Research in Otolaryngology, Baltimore.
- Demany, L., Pressnitzer, D., & Semal, C. (2009). *Tuning properties of the auditory frequency-shift detectors*. 32<sup>nd</sup> MidWinter Meeting of the Association for Research in Otolaryngology, Baltimore.
- Goodman\*, D., Pressnitzer, D., & Brette, R. (2009) *Sound localization with spiking neural networks*. 18th Annual Computational Neuroscience Meeting, San Francisco, USA.
- Pressnitzer, D., & Agus\*, T. (2009). *Reaction times for natural sound identification*. 32<sup>nd</sup> MidWinter Meeting of the Association for Research in Otolaryngology, Baltimore.
- Fraysse, B., Bestel, J., Pressnitzer, D., Sterkers, O., Frachet, B., Mondain, M., et al. (2008). *Frequency alignment and music perception: Results of a multicenter study*. 10<sup>th</sup> International Conference on Cochlear Implants and other Implantable Auditory Technologies, San Diego, USA.
- Maier\*, J. K., McAlpine, D., Klump, G., & Pressnitzer, D. (2008). *Coding of interaural time and level differences in the human brain: Adaptation and interactions?* 31<sup>st</sup> MidWinter meeting of the Association for Research in Otolaryngology, Phoenix, USA.
- Pressnitzer, D. (2008). *The build-up of streaming adapts to sequence duration*. 31<sup>st</sup> MidWinter meeting of the Association for Research in Otolaryngology, Phoenix, USA.
- Kirchner, H., Thorpe, S. J., & Pressnitzer, D. (2007). *Ultra-rapid communication of natural sounds: Assessing auditory processing speed with saccadic eye movements*. 14<sup>th</sup> European Conference on Eye Movement, Potsdam, Germany.
- Ardoint, M., Gorea, A., Debrulle, X., Pressnitzer, D., & Lorenzi, C. (2007). Recognition of complex temporal envelopes in normal hearing listeners and cochlear implantees. Paper presented at the 8<sup>th</sup> EFAS Conference, Heidelberg, Germany.
- Maier\*, J. K., McAlpine, D., Klump, G., & Pressnitzer, D. (2007). *Adaptive coding of interaural time and level differences in the human brain: jnds and interactions*. British Society of Audiology Short Papers Meeting on Experimental Studies of Hearing and Deafness, University College, London, UK.
- Pressnitzer, D., Micheyl, C., Sayles, M., & Winter, I. M. (2007). Responses to long-duration tone sequences in the cochlear nucleus. 30<sup>th</sup> MidWinter meeting of the Association for Research in Otolaryngology, Denver, USA.

- De Cheveigné, A., Pressnitzer, D., Parmentier\*, F., & Gandon\*, C. (2006). *Temporal integration in pitch perception*. 29th MidWinter meeting of the Association for Research in Otolaryngology, Baltimore, USA.
- Pressnitzer D., & Winter I. M. (2000) *Encoding first- and second-order periodicity in the ventral cochlear nucleus*. 23<sup>rd</sup> MidWinter meeting of the Association for Research in Otolaryngology, St Petersburg, USA.
- Winter I. M., Pressnitzer D., & Meddis R. (2000) *Physiological correlates of comodulation masking release in the ventral cochlear nucleus*. 23<sup>rd</sup> MidWinter meeting of the Association for Research in Otolaryngology, St Petersburg, USA.
- Pressnitzer, D., Patterson, R. D., & Krumbholz, K. (1999). *The lower limit of melodic pitch with filtered harmonic complexes*. Joint Meeting 137th ASA, 2nd EAA : Forum Acusticum 99, 25th DAGA, Berlin, Allemagne.
- Pressnitzer D., McAdams S. (1997). *Influence de la phase sur la perception de rugosité sons complexes*. 4<sup>ème</sup> Congrès Français d'Acoustique, Marseille.
- Pressnitzer D., McAdams S. (1997). *Influence of phase effects on roughness modelling*. International Computer Music Conference, Thessaloniki, Grèce.
- Pressnitzer D., McAdams S., Winsberg S., Fineberg J. (1996). *Roughness and tension of orchestral timbres*. 4th International Conference on Music Perception and Cognition. Montreal, Canada.

## **Organization of conferences and workshops**

- 04/2012 Co-organizer of the workshop Schlumberger Workshop on Mathematical Models of Sound Analysis. IHES, Bures-sur-Yvette. [12 communications, [http://www.ihes.fr/jsp/site/Portal.jsp?document\\_id=3072&portlet\\_id=114437](http://www.ihes.fr/jsp/site/Portal.jsp?document_id=3072&portlet_id=114437)].
- 04/2012 Co-organizer of the workshop New Ideas in Hearing 2012: Hot topics in Audiology., ENS, Paris [37 communications, <http://audition.ens.fr/newideas3/>].
- 06/2010 Organizer of the workshop Auditory Features in Machine Learning and Auditory Perception, ENS, Paris [13 communications, plenary from R. Lyon, Google, USA].
- 11/2008 Co-organizer of the international workshop “Hierarchies in Hearing”. ENS, Paris [16 communications, programme at <http://audition.ens.fr/ws2/> ]
- 06/2008 Co-organizer of the session “Integrated approaches to auditory scene analysis”. Acoustics'08, EAA & 156th Acoustical Society of America meeting & SFA. [18 talks, 8 posters, > 300 participants]. Funding from US Air Force.
- 06/2008 Organizer of the international Workshop “Perceptual Bistability in Audition and Vision”, ENS, Paris. [14 talks, programme available online at [http://audition.ens.fr/ws2/news/bistable\\_ws.html](http://audition.ens.fr/ws2/news/bistable_ws.html) ].
- 05/2006 Co-organizer of the international Workshop “New Ideas in Hearing”, ENS Paris, France [14 talks, programme at <http://audition.ens.fr/ws/> ].
- 2006 Organizer of the « Séminaires Audition », 17 talks by invited professors to the Paris lab. [Programme at <http://audition.ens.fr/news/seminaires.html> ].
- 08/2003 Co-organiser of the XIIIth International Symposium on Hearing [70 talks, proceedings and book].
- 03/2001 Organizer of the Journées Magnétoencéphalographie et Audition, Paris.

## Lab seminars and national conferences

- 02/2013 Invited talk, UCL Ear Institute, London, UK.
- 07/2012 Invited talk, Lyon Neuroscience, France.
- 11/2010 Invited talk, Leibniz Institute for Neurobiology, U. Magdeburg, Germany.
- 12/2009 7th Paris area Computational Neuroscience day, Paris, France.
- 10/2008 Scientific days Collège de France – Ecole Normale Supérieure, Paris, France.
- 05/2007 Département Parole et Cognition, GIPSA lab, Grenoble, France.
- 04/2007 NTT Human and Information Science Laboratory, Atsugi, Japon.
- 02/2007 Institute of Hearing Research, Nottingham, UK.
- 01/2007 UPR CNRS 640, Laboratoire de Neurosciences Cognitives & d'Imagerie Cérébrale, Paris, France.
- 11/2006 UMR CNRS 5020, Neurosciences & Systèmes sensoriels & unité INSERM 280, Lyon, France.
- 06/2005 LMA, UPR CNRS 7051, Marseille, France.
- 01/2005 Graduiertenkolleg Psychoakustik, Oldenburg, Allemagne.
- 08/2002 Workshop on Pitch : Neural coding and perception, Delmenhorst, Allemagne.
- 11/1999 Graduiertenkolleg Psychoakustik, Université de Oldenburg, Allemagne
- 06/1999 Hörobjekte, Zoologisches Institut, Université de Munich, Allemagne.

## Software

- 2005- *CI-Music*. Assessment software for cochlear implant users. Designed and implemented as part of a consulting contract with Advanced Bionics. The software has been used by several French and European centers. Used for two multi-centre studies.

## Scientific diffusion, Media

- 2014: Nuit des Sciences, École normale supérieure (speaker).
- 2012: Reports on the PNAS paper on self-motion and auditory-scene analysis ScienceNOW, WIRED, Popular Science, The Naked Scientists, COSMOS magazine, Huffington Post, ...
- 2012: TV interview, E=M6 (auditory scene analysis).
- 2012: Solicited paper in Cerveau & Psycho – L'Essentiel.
- 2010: CNRS press release and interviews for the Neuron paper on the memory of noise (Live Science, La Recherche, Pour la Science, Huma Dimanche, etc).
- 2010: General audience conferences (conservatoire de Lyon, Semaine du cerveau ENS Paris).
- 2008: Invited paper in *Pour la Science*. [French ed. of Scientific American].
- 2006-2007: Palais de la découverte. Scientific advisor for the exhibit "Illusions".
- 2006: CNRS press release and interviews for the Current Biology paper on auditory bistability (Nouvel Observateur, Pour la Science, etc).