

Liste des publications de Barbara NICOLAS

Revues internationales avec comité de lecture

- [R1] J. Bonnel, G. Le Touzé, **B. Nicolas**, and J.I. Mars. Physics-based time-frequency representations for underwater acoustics. *Signal Processing Magazine, Special Issue on Time-Frequency*, pages 120–129, Nov. 2013.
- [R2] F. Aulanier, **B. Nicolas**, J.I. Mars, P. Roux, and R. Brossier. Shallow-water acoustic tomography from angle measurements instead of travel-time measurements. *Journal Acoustical Society of America, Express Letters (JASA-EL)*, 134(4) :373–379, 2013.
- [R3] F. Aulanier, **B. Nicolas**, P. Roux, and J. I. Mars. Time-angle sensitivity kernels for sound-speed perturbations in a shallow ocean. *Journal Acoustical Society of America*, 134(1) :88–96, 2013.
- [R4] P. Roux, C. Marandet, **B. Nicolas**, and W. A. Kuperman. Experimental measurement of the acoustic sensitivity kernel. *Journal Acoustical Society of America, Express Letters (JASA-EL)*, 134(1) :38–44, 2013.
- [R5] M. Carmona, O. Michel, J.L. Lacoume, N. Sprinsky, and **B. Nicolas**. An analytical solution for the complete sensor network attitude estimation problem. *Signal Processing*, 93(4) :652–660, 2012.
- [R6] G. Le Touzé, **B. Nicolas**, J. I. Mars, P. Roux, and B. Oudompheng. Double-Capon and double-MUSICAL for arrival separation and observable estimation in an acoustic waveguide. *EURASIP Journal on Advances in Signal Processing*, ID 2012 :187, 2012.
- [R7] M. Carmona, O. Michel, J.L. Lacoume, N. Sprinsky, and **B. Nicolas**. Ward identities for visco-acoustic and visco-elastic propagation media. *Wave Motion*, 49(4) :484–489, 2012.
- [R8] J. Bonnel, C. Gervaise, **B. Nicolas**, and J.I. Mars. Single-receiver geoacoustic inversion using modal reversal. *Journal Acoustical Society of America*, 131(1) :119–128, 2012.
- [R9] J. Bonnel, C. Gervaise, P. Roux, **B. Nicolas**, and J.I. Mars. Modal depth function estimation using time-frequency analysis. *Journal Acoustical Society of America*, 130(1) :61–71, 2011.
- [R10] P. Roux, I. Iturbe, **B. Nicolas**, J. Virieux, and J.I. Mars. Travel-time tomography in shallow water : Experimental demonstration at an ultrasonic scale. *Journal Acoustical Society of America*, 130(3) :1232–1241, 2011.
- [R11] C. Marandet, P. Roux, **B. Nicolas**, and J.I. Mars. Target detection and localization in shallow water : an experimental demonstration of the acoustic barrier problem at the laboratory scale. *Journal Acoustical Society of America*, 129(1) :85–97, 2011.
- [R12] J. Bonnel, **B. Nicolas**, S. Walker, and J.I. Mars. Estimation of modal group velocities with a single receiver for geoacoustic inversion in shallow water. *Journal Acoustical Society of America*, 128(2) :719–727, Aout 2010.
- [R13] M. Lopatka, G. Le Touzé, **B. Nicolas**, X. Cristol, J.I. Mars, and D Fattaccioli. Underwater broadband source localization based on modal filtering and features extraction. *EURASIP Journal on Advances in Signal Processing*, ID 304103, 2010.
- [R14] I. Iturbe, P. Roux, J. Virieux, and **B. Nicolas**. Travel-time sensitivity kernels versus diffraction patterns obtained through double beamforming. *Journal Acoustical Society of America*, 126(2) :713–720, Aout 2009.
- [R15] I. Iturbe, P. Roux, **B. Nicolas**, J. Virieux, and J.I. Mars. Shallow-water acoustic tomography performed from a double-beamforming algorithm : Simulation results. *IEEE Journal of Oceanic Engineering*, 34(2) :140–149, April 2009.

- [R16] G. Le Touzé, **B. Nicolas**, J. Mars, and J.-L. Lacoume. Matched representations and filters for guided waves. *IEEE Trans. on Signal Processing*, 57(5) :1783–1795, Mai 2009.
- [R17] **B. Nicolas**, J. Mars, and J.-L. Lacoume. Source depth estimation using a horizontal array by matched-mode processing in the frequency - wavenumber domain. *EURASIP Journal of Applied Signal Processing*, ID 65901, 2006.
- [R18] **B. Nicolas**, J. Mars, and J.-L. Lacoume. Geoacoustical parameters estimation with impulsive and boat noise sources. *IEEE Journal of Oceanic Engineering*, 28(3) :494–501, 2003.

Revue française avec comité de lecture

- [F1] G. Le Touzé, **B. Nicolas**, J. Mars, and D. Fattaccioli. Représentations temps - fréquence adaptées aux ondes guidées. *Traitement du Signal*, 23 :379–390, 2006.
- [F2] **B. Nicolas**, I. Iturbe, P. Roux, and J.I. Mars. Double formation de voies pour la séparation et l'identification d'ondes : applications en contexte fortement bruité et à la campagne faf03. *Traitement de Signal (numéro spécial Grestis 07)*, pages 293–304, 2008.

Conférences internationales avec comité de lecture

- [C1] **B. Nicolas**, P. Roux, C. Marandet, and L. Bonneau. On the use of sensitivity kernels to image an gravity wave in an ultrasonic waveguide. In *1st international conference on Underwater Acoustics (UA2013)*, Corfu, Grèce, Juin 2013.
- [C2] J. Bonnel, **B. Nicolas**, G. Le Touzé, and J.I. Mars. Waveguide invariant-based spectrogram for modal dispersion analysis with perspective for low-frequency geoacoustic inversion at short-range. In *1st international conference on Underwater Acoustics (UA2013)*, Corfu, Grèce, Juin 2013.
- [C3] A. Cristea, F. Aulanier, H. Liebgott, and **B. Nicolas**. Estimation of time and angle variations for perturbations in an acoustic oceanic waveguide. In *1st international conference on Underwater Acoustics (UA2013)*, Corfu, Grèce, Juin 2013.
- [C4] F. Aulanier, **B. Nicolas**, P. Roux, and J. Mars. Time-angle ocean acoustic tomography using sensitivity kernels : Numerical and experimental inversion results. In *165th meeting Acoustical Society of America*, volume 133, page 3444, Montreal, Canada, Juin 2013.
- [C5] F. Aulanier, **B. Nicolas**, P. Roux, and J. Mars. Time-angle ocean acoustic tomography using sensitivity kernels : The forward problem. In *165th meeting Acoustical Society of America*, volume 133, page 3444, Montreal, Canada, Juin 2013.
- [C6] G. Le Touzé, **B. Nicolas**, J. Mars, and P. Roux. Observable variation estimation with 3d high-resolution methods on tank experiment for acoustic tomography. In *11th European Conference on Underwater Acoustics*, Edimbourg, Grande Bretagne, Juillet 2012.
- [C7] **B. Nicolas**, L. Bonneau, C. Marandet, and P. Roux. Surface acoustic tomography : imaging a gravity wave at the surface of an ultrasonic fluid waveguide. In *11th European Conference on Underwater Acoustics*, Edimbourg, Grande Bretagne, Juillet 2012.
- [C8] L. Bonneau, C. Marandet, P. Roux, **B. Nicolas**, and J. Mars. Dynamic tomography of a gravity wave at the interface of an ultrasonic fluid waveguide. In *162th meeting Acoustical Society of America*, volume 130, page 2454, San Diego, Etats Unis, Nov. 2011.
- [C9] J. Bonnel, C. Gervaise, **B. Nicolas**, and J.I. Mars. Passive geoacoustic inversion in a dispersive waveguide. In *162th meeting Acoustical Society of America*, volume 130, page 2391, San Diego, Etats Unis, Nov. 2011.

- [C10] C. Marandet, P. Roux, P. La Rizza, and **B. Nicolas**. Understanding the feedback effect through the physics of the diffraction-based sensitivity kernel for a target in shallow water : A small-scale experimental demonstration. In *162th meeting Acoustical Society of America*, volume 130, page 2410, San Diego, Etats Unis, Nov. 2011.
- [C11] G. Le Touzé, **B. Nicolas**, P. Roux, and J. Mars. Double multiple signal characterization active large band (d-musical) for extraction of observable in acoustic tomography. In *162th meeting Acoustical Society of America*, volume 130, page 2450, San Diego, Etats Unis, Nov. 2011.
- [C12] F. Aulanier, **B. Nicolas**, P. Roux, and J. Mars. Perspective of tomography inversion using direction-of-arrival and direction-of-departure. In *162th meeting Acoustical Society of America*, volume 130, page 2392, San Diego, Etats Unis, Nov. 2011.
- [C13] M. Carmona, O. Michel, J.-L. Lacoume, **B. Nicolas**, and N. Sprinsky. Passive identification of acoustic propagation media with viscous damping. In *19th European Signal Processing Conference (EUSIPCO)*, Barcelone, Espagne, Aout 2011.
- [C14] C. Marandet, P. Roux, and **B. Nicolas**. Amplitude and travel-time sensitivity kernels for a density change : experimental validation at the laboratory scale. In *4rd International Conference on Underwater Acoustics Measurements*, Kos, Grèce, Juin 2011.
- [C15] F. Aulanier, **B. Nicolas** , P. Roux, and J. Mars. Direction-of-arrival, direction-of-departure and travel-time sensitivity kernels obtained through double beamforming in shallow water. In *4rd International Conference on Underwater Acoustics Measurements*, Kos, Grèce, Juin 2011.
- [C16] J. Bonnel, **B. Nicolas** , and J. Mars. Modal depth function estimation over a partial spanning vla. In *4rd International Conference on Underwater Acoustics Measurements*, Kos, Grèce, Juin 2011.
- [C17] L. Jiang, F. Aulanier, G. Le Touzé, **B. Nicolas**, and J. Mars. Raypath separation with high resolution processing. In *IEEE Oceans*, Santander, Espagne, Juin 2010.
- [C18] C. Marandet, P. Roux, and **B. Nicolas**. Detection of a target in shallow water using the feedback phenomenon : a small-scale experimental demonstration. In *160th meeting Acoustical Society of America*, volume 128, page 2460, Cancun, Mexique, Nov. 2010.
- [C19] C. Marandet, P. Roux, and **B. Nicolas**. Tomography of the surface elevation in shallow water between two source-receiver ultrasonic arrays : a small-scale experimental demonstration. In *160th meeting Acoustical Society of America*, volume 128, page 2461, Cancun, Mexique, Nov. 2010.
- [C20] J. Bonnel, **B. Nicolas**, J.I. Mars, and D. Fattaccioli. Signal processing tools for geoacoustic inversion in shallow water. In *Passive 2010*, Brest, France, Juin 2010.
- [C21] **B. Nicolas**, I. Iturbe, P. Roux, and J.I. Mars. Spatial and temporal high resolution shallow water tomography in an ultrasonic tank : imaging a thermal plume. In *10th European Conference on Underwater Acoustics*, Istanbul, Turquie, Juillet 2010.
- [C22] J. Bonnel, **B. Nicolas**, J.I. Mars, and D. Fattaccioli. Single receiver inversion in shallow water. In *10th European Conference on Underwater Acoustics*, Istanbul, Turquie, Juillet 2010.
- [C23] J. Bonnel, **B. Nicolas**, J.I. Mars, and D. Fattaccioli. Source localisation in deep water using waveguide invariant distribution. In *10th European Conference on Underwater Acoustics*, Istanbul, Turquie, Juillet 2010.
- [C24] **B. Nicolas**, G. Le Touzé, C. Soares, S. Jesus, and J.I. Mars. Incoherent versus coherent matched mode processing for shallow water source localisation using a single hydrophone. In *Martech 2009*, Vilanova i la Geltru, Espagne, Nov. 2006.
- [C25] C. Marandet, P. Roux, and **B. Nicolas**. Detection and localization of a target in shallow water between two source-receive ultrasonic arrays : a small scale experiment demonstration. In *158th meeting Acoustical Society of America*, number 2187, San Antonio, United States, 2009.

- [C26] J. Bonnel, **B. Nicolas**, J.I. Mars, and D. Fattaccioli. Rapid inversion in shallow water with a single receiver using modal time-frequency pattern extraction. In *IEEE Oceans*, Biloxi, United States, Oct. 2009.
- [C27] J. Bonnel, **B. Nicolas**, J.I. Mars, and D. Fattaccioli. Frequency warping for waveguide characterisation with a single hydrophone. In *IEEE Oceans*, Biloxi, United States, Oct. 2009.
- [C28] M. Lopatka, **B. Nicolas**, G. Le Touzé, X. Cristol, B. Chalindar, J.I. Mars, and Fattaccioli D. Robust underwater localization for ultra low frequency sources in operational context. In *3rd International Conference on Underwater Acoustics Measurements*, Napflion, Grèce, Juin 2009.
- [C29] I. Iturbe, **B. Nicolas**, P. Roux, and J.I. Mars. New trends for shallow water acoustic tomography. In *2nd Workshop in Signal Processing for Marine and Seismic Data*, Espagne, Avril 2009.
- [C30] I. Iturbe, P. Roux, **B. Nicolas**, Virieux J., and J.I. Mars. Shallow water tomography : ray theory vs travel-time sensitivity kernels. In *157th meeting Acoustical Society of America*, Portland, United States, Mai 2009.
- [C31] J. Bonnel, **B. Nicolas**, J.I. Mars, Le Touzé G., and Fattaccioli D. Mode characterization in shallow water using warping tools. In *157th meeting Acoustical Society of America*, Portland, United States, Mai 2009.
- [C32] G Le Touzé, J. Torras, **B. Nicolas**, and J.I. Mars. Source localization on a single hydrophone. In *IEEE Oceans*, Quebec, Canada, Sept. 2008.
- [C33] J. Bonnel, G. Le Touzé, **B. Nicolas**, J.I. Mars, and C. Gervaise. Automatic and passive whale localization in shallow water using gunshots. In *IEEE Oceans*, Quebec, Canada, Sept. 2008.
- [C34] **B. Nicolas**, P. Roux, I. Iturbe, and J.I. Mars. An acoustic barrier based on amplitude variations of the ray paths and double beamforming. In *Acoustics'08-155th meeting Acoustical Society of America*, Paris, France, Juin 2008.
- [C35] G. Le Touzé, **B. Nicolas**, and J.I. Mars. Source localization on a single hydrophone. In *Acoustics'08-155th meeting Acoustical Society of America*, Paris, France, Juin 2008.
- [C36] I. Iturbe, P. Roux, **B. Nicolas**, and J.I. Mars. Ocean acoustic tomography using a double-beamforming algorithm. In *Acoustics'08-155th meeting Acoustical Society of America*, Paris, France, Juin 2008.
- [C37] **B. Nicolas**, G. Le Touzé, and J.I. Mars. Mode sign estimation to improve source depth estimation. In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Las Vegas, Etats Unis, Avril 2008.
- [C38] **B. Nicolas**, L. Verger, P. Grangeat, O. Monnet, and J-M. Dinten. A compton scattering and a collimation model for gamma images enhancement. In *IEEE Medical Imaging Conference (MIC)*, San Diego, Oct. 2006.
- [C39] G. Le Touzé, **B. Nicolas**, J.I. Mars, and J-L Lacoume. Time-frequency representation matched to guided waves. In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Toulouse, France, 2006.
- [C40] G. Le Touzé, **B. Nicolas**, J-L. Lacoume, J. Mars, and D. Fattaccioli. Source depth estimation using modal decomposition and time - frequency representation. In *IEEE/MTS Oceans05*, Brest, France, 2005.
- [C41] **B. Nicolas**, J. Mars, and J-L. Lacoume. Source depth estimation using modal decomposition and frequency-wavenumber transform. In *12th European Signal Processing Conference (EUSIPCO)*, Vienne, 2004.
- [C42] **B. Nicolas**, J. Mars, and J-L. Lacoume. Source depth estimation using matched field processing and frequency-wavenumber transform. In *IEEE/MTS Oceans03*, pages 912–916, SanDiego, Etats Unis, Sept. 2003.

- [C43] **B. Nicolas**, J. Mars, F. Glangeaud, and J-L. Lacoume. Measurement of geoacoustical parameters with ultra low frequency waves. In *3rd workshop on Physics in Signal and Image Processing (PSIP03)*, pages 53–56, Grenoble, Janv. 2003.
- [C44] **B. Nicolas**, J. Mars, J-L. Lacoume, and D. Fattaccioli. Are ultra low frequency waves suitable for detection? In *IEEE/MTS Oceans02*, pages 1109–1113, Biloxi, Etats Unis, Oct. 2002.
- [C45] A. Roueff, J. Chanussot, **B. Nicolas**, and J.I. Mars. Unsupervised seismic wave separation in the time/scale plane. In *63rd Meeting of European Association of Geoscientists and Engineers (EAGE)*, number 161, Amsterdam, Pays Bas, Juin 2001.

Conférences françaises avec comité de lecture

- [T1] M. Carmona, O. Michel, J.L. Lacoume, and **B. Nicolas**. Identification passive en milieux acoustiques faiblement visqueux - expérimentations. In *24^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 13)*, Brest, France, Sept. 2013.
- [T2] F. Aulanier, **B. Nicolas**, P. Roux, J. Mars, and R. Brossier. Mesure d'angles par double formation de voie appliquée à la tomographie acoustique sous-marine. In *24^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 13)*, Brest, France, Sept. 2013.
- [T3] J. Bonnel, G. Le Touzé, **B. Nicolas**, and J. I. Mars. Représentations temps-fréquence de la classe de puissance basées sur l'invariant océanique. In *24^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 13)*, Brest, France, Sept. 2013.
- [T4] B. Oudompheng, C. Gervaise, L. Lamotte, B. Ouegraogo, **B. Nicolas**, and J. I. Mars. Modélisation temporelle des sources acoustiques d'un bâtiment marin ou sous-marin en mouvement dans le champ lointain. In *24^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 13)*, Brest, France, Sept. 2013.
- [T5] M. Carmona, O. Michel, J.L. Lacoume, **B. Nicolas**, and N. Sprinsky. Estimation d'attitudes dans les réseaux de capteurs. In *23^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 11)*, Bordeaux, France, Sept. 2011.
- [T6] G. Le Touzé, **B. Nicolas**, and J. I. Mars. Double music actif large bande pour la tomographie sous-marine. In *23^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 11)*, Bordeaux, France, Sept. 2011.
- [T7] J. Bonnel, **B. Nicolas**, D. Fattaccioli, and J. I. Mars. Warping fréquentiel pour l'estimation du temps d'arrivée des modes en acoustique sous-marine. In *22^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 09)*, Dijon, France, Sept. 2009.
- [T8] I. Iturbe, P. Roux, **B. Nicolas**, and J. I. Mars. Noyaux de sensibilité de temps de propagation obtenus par double formation de voies : vers une tomographie plus robuste. In *22^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 09)*, Dijon, France, Sept. 2009.
- [T9] **B. Nicolas**, P. Roux, I. Iturbe, and J.I. Mars. Double formation de voies pour l'estimation de temps de trajets en contexte fortement bruité. In *21^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 07)*, Troyes, Sept. 2007.
- [T10] I. Iturbe, P. Roux, **B. Nicolas**, and J.I. Mars. Séparation d'ondes par double formation de voies : Application à la campagne faf03 de tomographie acoustique océanique. In *21^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 07)*, Troyes, Sept. 2007.
- [T11] G. Le Touzé, **B. Nicolas**, J.I. Mars, and J-L. Lacoume. Estimation de la distance source-captur en acoustique sous-marine. In *21^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 07)*, Troyes, Sept. 2007.
- [T12] **B. Nicolas**, P. Roux, J.L. Lacoume, and J.I. Mars. Localisation de source par filtrage modal : application à des données petites échelles en asm. In *20^{ème} Colloque sur le*

Traitement du Signal et des Images (GRETSI 05), Louvain la Neuve, Belgique, Sept. 2005.

- [T13] G. Le Touzé, **B. Nicolas**, J. Mars, and D. Fattaccioli. Représentations temps-fréquence adaptées aux ondes guidées. In *20^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 05)*, Louvain la Neuve, Belgique, Sept. 2005.
- [T14] **B. Nicolas**, J-L. Lacoume, and J. Mars. Champs d'ondes adaptés en fréquences spatiales et temporelles : applications en ASM. In *19^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 03)*, Paris, Sept. 2003.
- [T15] A Roueff, J. Chanussot, **B. Nicolas**, and J.I. Mars. Séparation d'ondes sismiques par ligne de partage des eaux sur des images temps-échelle. In *18^{ème} Colloque sur le Traitement du Signal et des Images (GRETSI 01)*, Toulouse, France, Sept. 2001.