

# CURRICULUM VITAE

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**Organisme d'affectation :** Univ. Eiffel    **Corps :** TPE    **Grade :** ICTPE  
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## Diplôme et titres universitaires

- 1990 Diplôme d'Ingénieur des Travaux Publics de l'Etat
- 1990 DEA Acoustique et Vibration de l'Ecole Centrale de Lyon
- 1993 PhD, University of Wales College of Cardiff, Grande Bretagne
- 2004 Habilitation à Diriger des Recherches, Université de Nantes

**Langues :** Français (langue maternelle), Anglais (lu, écrit, parlé), Espagnol (notions)

## Déroulement de carrière :

- 1993-2021 Chercheuse spécialisée sur les méthodes sismiques/ultrasonores pour l'auscultation des objets du génie civil
- 1997-2000 Co-animatrice de la Commission Technique « Mesure et Traitement de l'Information » du Pôle des Sciences de l'Ingénieur du LCPC
- 2002-2004 Animatrice de l'Opération « Champ physique et Propagation dans les sols et les structures du génie civil » du Comité de Programme LCPC « Auscultation, Surveillance et Diagnostic des Ouvrages, Reconnaissance des Sols Pathologie des ouvrages »
- 2006-2009 Coordinatrice du symposium international NDTCE'09
- 2012-2015 Présidente du Conseil Scientifique Restreint du Groupement d'Intérêt Scientifique LiRGeC (Institut Ligérien de Recherche en Génie Civil et Construction)
- 2012-2017 Pilote du Groupement d'Échange et de Recherche de l'Ifsttar « Evaluation Non destructive »
- 2011-2017 Membre du Comité AFF40 du TRB (USA) on Field Testing and Nondestructive Evaluation (NDE) of Transportation Structures
- 2001-2004 Membre du Conseil d'Administration de la Confédération Française pour les  
2010-2013 Essais Non Destructifs (COFREND)
- 2016-2020 Coordinatrice du projet européen [H2020-MSCA-ITN INFRASTAR](#)
- 2015-2021 Directrice du laboratoire Géophysique et Évaluation Non Destructive (Département GERS)
- 2018-2021 Directrice du GIS Évaluation et Contrôle Non Destructif en Pays de la Loire ([ENCD\\_PdL](#))
- 2021 → Membre élue du Conseil Académique de l'Université Gustave Eiffel
- 2021 → Adjointe au Directeur du Département GERS en charge de la politique internationale
- 2013 → Membre du bureau du Pôle Scientifique et Technique de la Confédération Française pour les Essais Non Destructifs ([COFREND](#))
- 2015 → Co-organisatrice des doctoriales de la COFREND
- 2019 → Coordinatrice de l'[Infrastar Training School®](#)
- 2023 → Co-organisatrice du congrès [Diagnobéton 2023](#)
- 2022-2025 Coordinatrice du projet [ANR-21-CE04-0007 FO-US](#)
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**Formation continue :** 2019 Formation Python / 2019 Formation « prise de parole sensible » / 2012 et 2019 H0 H1 M1 / 2010 Formation sur les incertitudes de mesure / 2007 Formation Lecture rapide / 2004 Formation Management / 2002 Stage CNRS « Ondelettes » / 2000 Formations CESAR, HTML / 1994 - 1996 3 stages LCPC sur les méthodes statistiques / 1995 Stage "Système d'acquisition de signaux : conception et réalisation" à Supélec / 1994 Cours INRIA sur les méthodes numériques d'ordre élevé pour les ondes en régime transitoire / 1993 Cours INRIA sur les ondes guidées et résonances.

**Affiliations en cours de validité :** COFREND, AFGC, SFA

**Prix :** 2020 : Récompense les Etoiles de l'Europe pour le projet [H2020-MSCA-ITN INFRASTAR](#)

2005 : EAGE Mintrop Award pour l'article **Abraham O.**, Chammas R., Côte Ph., Pedersen H.A., Semblat J.-F., *Mechanical characterisation of heterogeneous soils with surface waves : experimental validation on reduced scale physical models*, Near Surface Geophysics, 2(4), pp249-258, 2005.

1990-1993 : British Council grant

## **Publications :**

Wang Ao, Leparoux D., **Abraham O.**, Differential Time-Lapse Inversion of surface-wave phase velocity dispersion using the Diagram Distance between dispersion diagrams, submitted to the Journal of Applied Geophysics

Dérobot X., Villain G., Palma-Lopes S., Bouvard-Coconet V., Decitre J.M., Jabbour J., Qu S., Geffard J.L., Durand O., Gugole G., Abraham O., Electromagnetical and ultrasonic characterizations of concretes subjected to internal swelling reactions, NDT & E International, 2024.  
<https://doi.org/10.1016/j.ndteint.2024.103217>

Hariri R., Chaix J.-F., Shokouhi P., Garnier V., Saïdi-Muret C., Durand O., Odile **Abraham O.**, Quantification of the Uncertainty in Ultrasonic Wave Speed in Concrete: Application to Temperature Monitoring with Embedded Transducers, Sensors, 2024.  
<https://doi.org/10.3390/s24175588>

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Wang Ao, **Abraham O.**, Leparoux D., Time-lapse global inversion for surface waves: a differential approach using a linear approximation of the Rayleigh wave phase velocity, Wave Motion, Vol. 122, 2023.  
<https://doi.org/10.1016/j.wavemoti.2023.103193>

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<https://doi.org/10.1016/j.conbuildmat.2023.131772>

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<https://doi.org/10.1016/j.ultras.2023.106991>

Qi X., Larose E., Moreau L., They R., **Abraham O.**, Henault J.-M., Ultrasonic monitoring of stress and cracks of the 1/3 scale mock-up of nuclear reactor concrete containment structure, Structural Health Monitoring, 2021. <https://doi.org/10.1177/14759217211034729>

Chen G., Zhang Y., **Abraham O.**, Pageot D., Chekroun M., Tournat V., Numerical parametric study of Nonlinear Coda Wave Interferometry sensitivity to microcrack size in a multiple scattering medium, Ultrasonics, 2021. <https://doi.org/10.1016/j.ultras.2021.106483>

Wang A., Leparoux D., **Abraham O.**, Lefeuvre M., Frequency derivative of Rayleigh wave phase velocity for fundamental mode dispersion inversion: parametric study and experimental application, Geophysical Journal International, 2020. <https://doi.org/10.1093/gji/ggaa417>

Bassil A., Chapeleau X., Leduc D., **Abraham O.**, Concrete Crack Monitoring Using a Novel Strain Transfer Model for Distributed Fiber Optics Sensors, Sensors 2020, 20, 2220.  
<https://doi.org/10.3390/s20082220>

Gallezot M., Treysède F., **Abraham O.**, Forced vibrations and wave propagation in multilayered solid spheres using a one-dimensional semi-analytical finite element method, Wave Motion, 96, 2020  
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They R., Guillemot A., **Abraham O.**, Larose E., Tracking fluids in multiple scattering and highly porous materials: toward applications in non-destructive testing and seismic monitoring, Ultrasonics, 102, 2020.  
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**Abraham O.N.L.**, Brandon J., Cohen A., *Remark on the determination of compliance coefficients at the crack section of a uniform beam with circular cross-section*, Journal of Sound and Vibration, 169(4), pp570-574, 1994.

### Ouvrages :

Payan C., **Abraham O.**, Garnier V., Ultrasonic methods, in Non-Destructive Testing and Evaluation of Civil Engineering Structures, ISTE Press Ltd. Published by Elsevier Ltd., Edited by JP Balayssac and Vincent Garnier, ISBN 978-1-78548-229-8, 2018, pp21-85. <https://doi.org/10.1016/B978-1-78548-229-8.50002-9>

**Abraham O.**, Popovics J.S., *Impact-echo techniques for evaluation of concrete structures*, in Non-destructive evaluation of reinforced concrete structures, Vol.2, Woodhead Publishing Limited, CRC Press N10267, ISBN 978-1-84569-950-4, 2010, pp466-489.

Popovics J.S., **Abraham O.**, *Surface wave techniques for evaluation of concrete structures*, in Non-destructive evaluation of reinforced concrete structures, Vol.2, Woodhead Publishing Limited, CRC Press N10267, ISBN 978-1-84569-950-4, 2010, pp441-465.

**Abraham O.**, Krause M., *Impact echo*, in COST 534 New Materials, Systems, Methods and Concepts for Prestressed Concrete Structures, Final Report, Edited by Polder RB, ISBN 978-9-0598-63323, 2009, pp137-148.

Proceedings of the 7<sup>th</sup> International Symposium on Non Destructive Testing in Civil Engineering, 30 june - 3 july 2009, Edited by **Abraham O.**, Dérobert, X., ISBN 978-2-7208-2542-5, DOI/CrossRef: 10.3829/act-actndtce-fr

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Champs physiques et propagation dans les sols et les structures du génie civil, sous la direction de **Abraham O.**, SI11, Etudes et recherches des laboratoires des ponts et chaussées, ISSN 1167-4865, 2006, 221p.