

# MAHDI JASIM HASAN AL-KAABI

Doctorate of Science in Mathematics

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- ❖ I am a member of an European group of research *GDR du Renormalization* ( from September 2012 - till now, the webpage of this group is <http://renorm.math.cnrs.fr/spip.php?article5&lang=fr> ).

## EDUCATION:

➤ 2020-2021	<p>Sabbatical leave in Department of Mathematical Sciences/ College of Information Technology and Electrical Engineering (IE)/ NTNU: Norwegian University of Science and Technology, Trondheim, Norway, cooperate with The Laboratory of Mathematics/ College of Sciences and Technologies/ University Clermont-Auvergne, Clermont-Ferrand, France:</p> <ul style="list-style-type: none"><li>• One year of research:<ul style="list-style-type: none"><li>- Research project entitled <i>Post-Lie-Magnus expansion and BCH-recursion</i>, work with Kurusch Ebrahimi-Fard and Dominique Manchon.</li><li>- Research project entitled <i>Connection Algebras-Lie Butcher series for geodesic flows</i>, work with Kurusch Ebrahimi-Fard, Dominique Manchon, and Hans Munthe-Kaas.</li></ul></li></ul>
➤ 2014-2015	<p>Ph.D. of Sciences in Mathematics / College of Sciences and Technologies / Blaise-Pascal University, Clermont-Ferrand II, France:</p> <ul style="list-style-type: none"><li>• Three years of research: research project entitled <i>Monomial Bases for Free Pre-Lie Algebras and Applications</i>, supervised by Dr. Dominique Manchon and Dr. Frédéric Patras.</li></ul>
➤ 2005-2006	<p>Master of Sciences in Mathematics / College of Sciences / Mustansiriyah University, Iraq:</p> <ul style="list-style-type: none"><li>• First Year: theoretical courses.</li><li>• Second Year: research project entitled <i>Vector Groupoid and Isometries</i>. The project was conducted under the supervision of Asst. Prof. Dr. Abid Ali Al Taai.</li></ul>
➤ 2002-2003	<p>Bachelor of Science in Mathematics / College of Sciences / Mustansiriyah University, Iraq.</p>

## ACADEMIC /TEACHING EXPERIENCE:

➤ 2006-present	<ul style="list-style-type: none"> <li>• Member of Sobriety Committee in the Mathematics department, college of sciences, Mustansiriyah University (from December 2019 till now)</li> <li>• Member of Electronic Quotation Committee in the Mathematics department, college of sciences, Mustansiriyah University (from December 2019 till now)</li> <li>• Member of the Editorial Board of the Journal of the College of Science, Mustansiriyah University (from November 2018 to November 2019).</li> <li>• Asst. Head of Mathematics Department, College of Science, Mustansiriyah University (from January 2017 to June 2018).</li> <li>• Lecturer in mathematics, College of Science, Mustansiriyah University</li> <li>• Participated in Scientific Seminars.</li> <li>• Supervised undergraduate students' scientific research.</li> <li>• 120 hours covered in an interactive scientific training.</li> </ul>
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## COURSES TAUGHT:

Undergraduate
<ul style="list-style-type: none"> <li>• Foundations of Mathematics</li> <li>• Linear Algebra</li> <li>• Mathematical Analysis</li> <li>• Differential Geometry</li> </ul>

## PUBLICATIONS:

➤ 2021	Mahdi J. Hasan AL-Kaabi, Kurusch Ebrahimi-Fard, Dominique Manchon, Hans Munthe-Kaas, <i>Connection Algebras-Lie Butcher series for geodesic flows</i> , to be appear.
➤ 2021	Mahdi J. Hasan AL-Kaabi, Kurusch Ebrahimi-Fard, Dominique Manchon, <i>Post-Lie-Magnus expansion and BCH-recursion</i> , SIGMA (Symmetry, Integrability and Geometry – EMIS) Journal, arXiv:2108.11103.
➤ 2020	M. J. H. Al-Kaabi, <i>Monomial Bases for Free Post-Lie Algebras</i> , IOP Conf. Series: Materials Science and Engineering 871 (2020) 012048 doi:10.1088/1757-899X/871/1/012048
➤ 2019	Mahdi J. Hasan AL-Kaabi, <i>On Pre-Lie Magnus Expansion</i> , Journal of Al-Nahrain University, Vol. 0 (2019), No. 2, pp. 101-112.
➤ 2018	Mahdi J. Hasan AL-Kaabi, Dominique Manchon and Frédéric Patras, <i>Monomial Bases and Pre-Lie Structures for Free Lie Algebras</i> , Journal of Lie Theory 28 (2018), No. 4, pp. 941-967.
➤ 2014	Mahdi J. Hasan AL-Kaabi, <i>Monomial Bases for Free Pre-Lie Algebras</i> , Séminaire Lotharingien de Combinatoire 71 (2014), Article B71b.
➤ 2007	AL Taai, A.A. and AL-Kaabi, M.J., <i>Vector Groupoid and Isometries</i> . Al-Mustansiriyah J. Sci. Vol. 18 (2007), No. 1.

## WORKSHOPS AND CONFERENCES:

➤ 12-17 September 2021	<b>Moulien Calculus and Combinatorial Hopf Algebras</b> , Rencontres de l'ANR Carma, Besse, France.
➤ 26-27 February 2020	<b>The First International Conference of Pure and Engineering Sciences (ICPES2020)</b> , Karbala, Iraq
➤ 7-19 April 2019	<b>Isfahan School and Conference on Representations of Algebras</b> , University of Isfahan and IPM-Isfahan, Iran.
➤ 12-16 November 2018	<b>Around the notion of comodule-bialgebra</b> , 1 <sup>ère</sup> rencontre du GDR Renormalisation, Laboratoire de Mathématiques Blaise Pascal, Clermont-Ferrand, France.
➤ 28/29 March 2018	<b>By the Solid Scientific Research, the nations rise up</b> , 1 <sup>st</sup> Scientific International Conference of Iraqi Al-Khwarizmi Association, Basra University, Basra, Iraq.
➤ 21/22 November 2017	<b>Advanced Science is a Pillar for Reconstruction and Development</b> , 1 <sup>st</sup> Scientific International Conference, College of Sciences, Nahrain University, Baghdad, Iraq.
➤ 26-30 June 2017	<b>Algebraic Combinatorics, Resurgence, Moulds and Applications</b> , Centre International de Rencontres Mathématiques (CIRM), Marseille, France.
➤ 15/16 January 2015	<b>Hopf Algebras and Causal sets</b> , Calais, France.
➤ 13-17 October 2014	<b>Moulien Calculus and Combinatorial Hopf Algebras</b> , Rencontres de l'ANR Carma, Besse, France.
➤ 18-22 November 2013	<b>Combinatorics of Dynamical Systems</b> , Centre International de Rencontres Mathématiques (CIRM), Marseille, France.
➤ 8-12 April 2013	<b>Combinatorial Hopf Algebras and Mould Calculus</b> , Collegio Puteano, Scuola Normale Superiore Piazza dei Cavalieri, Pisa, Italy.

## APPRAISAL CERTIFICATIONS:

➤ 2012	French language appraisal certification from the Centre of applied linguistics, Franche-Comté University in Besançon-France.
➤ 2005	Computing and internet appraisal certification from the computer center, Mustansiriyah University.
➤ 2003	English language appraisal certification from the College of Arts, Mustansiriyah University.

## LANGUAGES:

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- Arabic: Mother tongue
- English: Good command
- French:
  - DELF level A1
  - DELF level B1
  - Last evaluation B2