

João Lourenço

CONTACT	Department of Mathematics Université Sorbonne Paris Nord 99 avenue Jean-Baptiste Clément 93430 Villetaneuse, France	<i>Email:</i> lourenco@math.univ-paris13.fr <i>Website:</i> math.univ-paris13.fr/~lourenco
RESEARCH	Algebraic geometry, number theory, representation theory. Shimura varieties, geometric Langlands programme, geometric representation theory in mixed characteristic.	
EDUCATION	PhD in Mathematics , Universität Bonn • Thesis: <i>Bruhat–Tits theory, affine Grassmannians and local models</i> • Advisor: Peter Scholze (defense: 7 Sept. 2020, <i>magna cum laude</i>) Master’s in Mathematics , Universität Bonn • Advisor: Peter Scholze Bachelor’s in Mathematics , Universidade do Porto	2017–2020 2015–2017 2012–2015
POSITIONS	Full Professor , Université Sorbonne Paris Nord Akademischer Rat auf Zeit , Universität Münster Wissenschaftlicher Mitarbeiter , Universität Münster Visiting researcher , Max-Planck-Institut für Mathematik, Bonn Research associate , Imperial College London Wissenschaftlicher Mitarbeiter , Universität Bonn	2025– 2024–25 2022–23 2022 2020–21 2017–20
ARTICLES	17. (with K. Bando, I. Gleason and J. Yu) “The Bezrukavnikov equivalence in mixed characteristic”, in preparation. 16. (with T. Richarz, E. Viehmann and T. Wedhorn) “Moduli descriptions of local models”, in preparation. 15. (with A. Ivanov, I. Gleason, L. Hamann and K. Zou) “On the schematic and analytic constructions of the local Langlands category”, in preparation. 14. (with R. Cass) “Mod p sheaves on Witt flags”, arXiv:2503.01796. 13. (with P. Achar, T. Richarz and S. Riche) “A modular ramified Satake equivalence”, arXiv:2403.10651, submitted. 12. “Distributions and normality theorems”, arXiv:2312.17121, submitted. 11. (with J. Anschütz, Z. Wu and J. Yu) “Gaitsgory’s central functor and the Arkhipov–Bezrukavnikov equivalence in mixed characteristic”, arXiv:2311.04043, submitted. 10. (with P. Achar, T. Richarz and S. Riche) “Fixed points under pinning-preserving automorphisms of reductive group schemes”, arXiv:2212.10182, to appear in <i>Annali della Scuola Normale Superiore di Pisa, Classe di Scienze</i> . 9. (with I. Gleason) “On the connectedness of p -adic period domains”, arXiv:2210.08625, submitted. 8. (with N. Fakhruddin, T. Haines and T. Richarz) “Singularities of local models”, arXiv:2208.12072, <i>Mathematische Annalen</i> 391 (2025), no. 4, 6205–6250. 7. (with I. Gleason) “Tubular neighborhoods of local models”, arXiv:2204.05526, <i>Duke Mathematical Journal</i> 173 (2024), no. 4, 723–743. 6. (with J. Anschütz, I. Gleason and T. Richarz) “On the p -adic theory of local models”, arXiv:2201.01234, to appear in <i>Annals of Mathematics</i> . 5. (with T. Haines and T. Richarz) “On the normality of Schubert varieties: remaining cases in positive characteristic”, arXiv:1806.11001, <i>Annales Scientifiques de l’École Normale Supérieure</i> (4) 57 (2024), no. 3, 895–959.	

4. “Bruhat–Tits theory, affine Grassmannians and local models”, Dissertation, Universität Bonn, 2020. bonndoc.
3. “Théorie de Bruhat–Tits pour les groupes quasi-réductifs”, arXiv:2001.05362, *Journal de l’Institut de Mathématiques de Jussieu* **21** (2022), no. 4, 1331–1362.
2. “Grassmanniennes affines tordues sur les entiers”, arXiv:1912.11918, *Forum of Mathematics Sigma* **11** (2023), Paper no. e12, 65 pp.
1. “The Riemannian Hebbbarkeitssätze for pseudo-rigid spaces”, arXiv:1711.06903.

GRANTS	<p>Sonderforschungsbereich 1442 “Geometrie: Deformationen und Rigidität”, Deutsche Forschungsgemeinschaft</p> <ul style="list-style-type: none"> • Principal investigator in projects A1 (with E. Hellmann and P. Schneider) and A5 (with E. Viehmann and Y. Zhao). 	2024–25
INVITED TALKS	<p>“Comparaison des faisceaux sur Isoc et Bun”, Luminy</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Paris Nord</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Orsay</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Marseille</p> <p>“Mod p sheaves on Witt flags”, Singapore</p> <p>“Modular ramified Satake”, Singapore</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Jussieu</p> <p>“Comparison of sheaves on Isoc and Bun”, Paderborn</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Strasbourg</p> <p>“Comparaison des faisceaux sur Isoc et Bun”, Clermont-Ferrand</p> <p>“Arkhipov–Bezrukavnikov for p-adic groups”, Tokyo</p> <p>“Arkhipov–Bezrukavnikov pour les groupes p-adiques”, Jussieu</p> <p>“Modular ramified Satake”, Münster</p> <p>“Arkhipov–Bezrukavnikov for p-adic groups”, Geometric and categorical representation theory, Clermont-Ferrand</p> <p>“Local models revisited”, 75th anniversary of M. Rapoport, Münster</p> <p>“Teoria geométrica das representações e geometria p-ádica”, Coimbra</p> <p>“Variétés des drapeaux et +-régularité globale”, Théorie des représentations à Lyon</p> <p>“Towards Bezrukavnikov via p-adic central sheaves”, Local Langlands and p-adic methods, Bonn</p> <p>“Towards Bezrukavnikov via p-adic local models”, Arithmetic of Shimura varieties, Oberwolfach</p> <p>“p-adic local models I & II”, Münster</p> <p>“Modèles locaux p-adiques : géométrie et cohomologie”, Paris-Nord</p> <p>“Mini-cours sur la théorie p-adique des modèles locaux”, Caen</p> <p>“Tubular neighborhoods of local models II”, MPIM Bonn</p> <p>“Local models for p-adic shtukas”, MPIM Bonn</p> <p>“On the p-adic theory of local models”, Hong Kong</p> <p>“On the p-adic theory of local models II”, Rampage</p> <p>“On the p-adic theory of local models”, Munich</p> <p>“Sur la théorie p-adique des modèles locaux”, Orsay</p> <p>“Sur la théorie p-adique des modèles locaux”, Paris Rive Gauche</p> <p>“On the p-adic theory of local models”, Fields Medal Symposium, Toronto</p> <p>“Towards the Scholze–Weinstein conjecture on local models”, London</p> <p>“Vers la conjecture de Scholze–Weinstein sur les modèles locaux”, Paris Nord</p>	<p>16.02.26</p> <p>12.12.25</p> <p>02.12.25</p> <p>18.11.25</p> <p>10.11.25</p> <p>03.11.25</p> <p>29.09.25</p> <p>29.08.25</p> <p>10.04.25</p> <p>25.03.25</p> <p>07.10.24</p> <p>22.04.24</p> <p>18.04.24</p> <p>23.10.23</p> <p>02.10.23</p> <p>26.07.23</p> <p>26.06.23</p> <p>12.06.23</p> <p>03.02.23</p> <p>10.22</p> <p>06.22</p> <p>26.05.22</p> <p>06.05.22</p> <p>28.04.22</p> <p>15.03.22</p> <p>09.02.22</p> <p>12.01.22</p> <p>07.12.21</p> <p>29.11.21</p> <p>26.10.21</p> <p>11.11.20</p> <p>09.10.20</p>

	“On the geometry of mixed characteristic affine Grassmannians”, Oberwolfach	24.07.20
	“Twisted affine Grassmannians in wildly ramified cases”, Bonn	28.11.19
	“Bruhat–Tits theory for pseudoreductive groups”, Bonn	21.11.19
	“Twisted affine Grassmannians over \mathbf{Z} ”, Modularity and Moduli Spaces, Oaxaca	21.10.19
	“Twisted affine Grassmannians and local models of Shimura varieties”, London	11.10.19
	“Twisted Kac–Moody groups over the integers”, Immeubles et grassmanniennes affines, Luminy	30.08.19
	“Local models for some wildly ramified groups”, Bonn	20.12.18
	“The Riemannian Hebbbarkeitssatz for pseudo-rigid spaces I & II”, Bonn	04.17
CONFERENCES	“Sino-French Symposium on Number Theory”, Tianyuan Mathematics Research Center, Hangzhou (speaker)	06–07.26
	“Simons Collaboration Annual Meeting”, New York	03.26
	“Géométrisation de la correspondance de Langlands locale”, Luminy (speaker)	02.26
	“ENTR Workshop 25”, Paderborn (speaker)	08.25
	“BIRS Workshop”, Hangzhou	07.25
	“Oberwolfach Seminar on Algebraic groups”, Oberwolfach	04.25
	“Simons Collaboration on Perfection in Algebra, Geometry and Topology Annual Meeting”, New York	03.25
	“Geometric approaches to the local Langlands program”, Maryland	03.25
	“Reduction of arithmetic varieties”, Oberwolfach (speaker)	10.24
	“Workshop on Shimura varieties, representation theory and related topics”, Tokyo (speaker)	10.24
	“Simons Collaboration Annual Meeting”, New York	03.24
	“Geometric and categorical representation theory”, Clermont-Ferrand (speaker)	10.23
	“Conference on the occasion of the 75th anniversary of M. Rapoport”, Münster (speaker)	10.23
	“Local Langlands and p -adic methods”, Bonn (speaker)	07.23
	“Arithmetic of Shimura varieties”, Oberwolfach (speaker)	02.23
	“Summer School on The Langlands Programme”, Paris	07.22
	“30th Rencontres arithmétiques de Caen”, Caen (speaker)	05.22
	“2021 Fields Medal Symposium: Peter Scholze”, Toronto (speaker)	11.21
	“Oberwolfach Arithmetic Geometry”, Oberwolfach (speaker)	07.21
	“Modularity and moduli spaces”, Oaxaca (speaker)	10.19
	“Hausdorff School on the Emerton–Gee stack and related topics”, Bonn	08.19
	“Immeubles et grassmanniennes affines”, Luminy (speaker)	09.19
	“Arithmetic Geometry in Carthage”, Carthage	06.19
	“The p -adic Langlands programme and related topics”, London	05.19
	“Groupes algébriques et géométrisation du programme de Langlands”, Lyon	06.18
	“Leçons Hadamard par P. Scholze”, Paris	04.17
	“Arizona Winter School 2017: Perfectoid Spaces”, Tucson	03.17
	“Oberwolfach Seminar on Perfectoid Spaces”, Oberwolfach	10.16
TEACHING	Course “Perfectoid spaces”	Spring 2026
	Tutorials in algebra 6, TA for É. Hoffbeck	Spring 2026

	Tutorials in linear algebra, TA for C. Ausoni	Spring 2026
	Tutorials in programming, TA for N. Mustafa	Spring 2026
	Tutorials in commutative algebra, TA for P. Boyer	Fall 2025
	Tutorials in algebraic topology, TA for B. Vallette	Fall 2025
	Reading seminar “Affine Deligne–Lusztig theory” (with E. Viehmann and I. Zachos)	Spring 2025
	Course “Lineare Algebra II”, TA for E. Viehmann	Spring 2025
	Reading seminar “Vector bundles in the v -topology and Sen theory” (with E. Hellmann and L. Mann)	Fall 2024
	Course “Lineare Algebra I”, TA for E. Viehmann	Fall 2024
	Course “Algebraic Geometry II”	Spring 2024
	Course “Geometrische Lineare Algebra”, TA for U. Hartl	Fall 2023
	Seminar “Homological and Frobenius methods in commutative algebra”	Spring 2023
	Reading seminar “Bezrukavnikov” (with K. Zou)	Fall 2022
	Seminar “Darstellungstheorie endlicher Gruppen” (with E. Viehmann)	Fall 2022
	Reading seminar “Geometrization of the Langlands program” (with M. Tamiozzo)	Fall 2020
RESEARCH VISITS	Singapore, hosted by I. Gleason	10.25
	Maryland, with I. Gleason and J. Yu, hosted by T. Haines	03.25
	Grenoble, hosted by P. Achar and S. Riche	07.22
	Paris-Nord, hosted by S. Morra and A.-C. Le Bras	06.22
	Paris-Saclay, hosted by K. Česnavičius	11.21
	Imperial College London, hosted by A. Caraiani	02.20
	Institut de mathématiques de Jussieu, hosted by J. Anschütz and T. Richarz	12.18
REFEREE	<i>Annals of Mathematics, Inventiones Mathematicae, Forum of Mathematics Pi, Annales Scientifiques de l’École Normale Supérieure, Mathematische Annalen, Representation Theory, Canadian Journal of Mathematics, Épijournal de Géométrie Algébrique.</i>	
LANGUAGES	Portuguese (native), German, English, Spanish, French, Italian (fluent).	