

Thomas Morel

Professor für Geschichte der
Mathematik und ihres Unterrichts

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Education and Employment

- 2022 – present **Professor für Geschichte der Mathematik und ihres Unterrichts.**
Bergische Universität Wuppertal (NRW, Germany)
- 2015 – 2022 **Maitre de conférences en histoire des mathématiques.**
Laboratoire de Mathématiques de Lens (EA 2462) and University of Lille.
- ☐ 2020, *Visiting scholar at the Max-Planck-Institute for the History of Science, Berlin.*
- 2013 – 2015 **Postdoctoral fellow, Technical University of Berlin.**
Berlin Center for the History of Knowledge
- 2009 – 2013 **PhD in Epistemology and history of sciences, Université de Bordeaux.**
Thesis title: *Mathématiques et politiques scientifiques en Saxe (1765-1851). Institutions, acteurs et enseignements.* Supervisors : Pascal Duris and Layla Ra

Publications

Books

- 2022 *Underground Mathematics. Craft Culture and Knowledge Production in the Holy Roman Empire (1500-1800)*, Cambridge University Press.
- 2015 *Von der akademischen zur praktischen Mathematik (1765–1851). Mathematisch-technische Bildung zwischen sächsischer Bergakademie und polytechnischer Schule Dresden*, Berlin, Diachron-Verlag, 353 pages.

Refereed Journal Articles and Book Chapters:

This is a selection of significant and recent publications. The complete list is available at <http://morelthomas.com/publications/>

- forthcoming* “Mathematics and Technological Change (1450-1686) : The Silent Rise of Practical Mathematics”, in Jeanne Peiffer and Volker Remmert (eds.), *Bloomsbury Cultural History of Mathematics*, vol. 3, *forthcoming*, 2021.
- 2022 “Incorporer, consolider et transmettre: Géométrie pratique et savoirs miniers époque moderne”, in *Les ingénieurs, des intermédiaires ?*, Toulouse, Presses Universitaires du Midi, p. 173-186.
- 2021 “ Enseigner les mathématiques dans une région minière: prégnance du contexte local dans les Monts Métallifères de Saxe”, in Renaud d’Enfert and Virginie Fonteneau (dir.), p. 81-101.
- 2020 “De Re Geometrica: Writing, Drawing and Preaching Mathematics in Early Modern Mines”, in *Isis, A Journal of the History of Science Society*, 111(1), p. 22-45.
- ◇ “Markscheidekunst und die Anwendung der Mathematik im frühneuzeitlichen Bergbau”, in Rainer Gebhardt (ed.), *Die Entwicklung der Mathematik in der frühen Neuzeit*, 2020.
- 2018 “Five Lives of a *Geometria subterranea* (1708-1785). Authorship and Knowledge Circulation in Practical Mathematics”, in *Revue d’histoire des mathématiques*, 24(2), pp. 207-258.
- ◇ “Julius Weisbach’s Pioneering Contribution to Orthogonal Linear Regression (1840)”, with D. Stoyan, in *Historia Mathematica*, 45(1), 2018, pp. 75-84.

- ◇ “Was ist praktisch am mathematischen Wissen? Die Positionen des Bergmeisters J. A. Scheidhauer und des Baumeisters C. F. Steiner in der Zeit um 1800”, with K. Klinger, in *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 26, pp. 267-299.
- 2017 “Bringing Euclid into the Mines: Classical Sources and Vernacular Knowledge in the Development of Subterranean Geometry”, in *Translation and the Circulation of Knowledge in Early Modern Science*, Franssen S., Hodson N. and Enenkel K. (éds.), Brill, pp. 154-181.
- 2015 “Le microcosme de la géométrie souterraine : échanges et transmissions en mathématiques pratiques”, in *Philosophia Scientiæ*, special issue *échanges mathématiques : études de cas (XVIIIe-XXe siècles)* 19/2, pp. 17-36.
 - ◇ “Une révolution peut en cacher d’autres. Le paysage morcelé des mathématiques dans l’espace germanophone et ses reconfigurations”, with M. Bullynck, in *Sciences mathématiques 1750-1850: continuités et ruptures*, C. Gilain and A. Guilhaud (éds.), CNRS Editions, pp. 181-206.
- 2014 “Arithmetical Periodicals in late Eighteenth-Century Germany: ‘Mathematics for the Use and the Pleasure of Civic Life’”, in *Archives Internationales d’Histoire des Sciences*, 64-172/173, pp. 397-427.
- 2013 “Mathématique et *Naturphilosophie* : L’exemple de la controverse entre J.J. Wagner et J. Schön (1803-1804)”, in *Revue d’Histoire des Sciences*, 66(1), pp. 73-105.

Conferences proceedings and textbooks chapters:

- 2019 “Subterranean geometry and its instruments: About practical geometry in the Early Modern Period”, in *Oberwolfach Reports* 58, MFO, pp. 80-83.
- 2016 “The Making of Useful Knowledge” (Conference held in October 2014), T. Morel, G. Parolini and C. Pastorino (editors), in the *Preprint Series* of the Max-Planck-Institut für Wissenschaftsgeschichte MPIWG, vol. 481, 91 pages.
 - ◇ “Usefulness and Practicability of Mathematics: the German Mining Academies in the 18th century”, in *The Making of Useful Knowledge*, Max-Planck-Institut für Wissenschaftsgeschichte, *Preprint Series* vol. 481, pp. 49-63.

Translation:

- 2019 “Le thème de la triste et laide Kovalevskaya”, translation of E. Kaufholz-Soldat (from German) for *Images des mathématiques*, CNRS (28.09.2021).
- 2019 “Analyse des imageries des instruments scientifiques de l’époque moderne (XVIe-XVIIe siècle)”, translation of V. Remmert (from German) for *Images des mathématiques*, CNRS (29.05.2019).
- 2013 “Mr. Strawson sur la théorie logique”, translation (with Dr. L. Ra of W.O. Quine, in *Les voies du paradoxe* Paris, Vrin, pp. 249-279.

Book reviews:

- 2022 *Technoscience in History. Prussia, 1750-1850*, Ursula Klein (Cambridge, The MIT Press, 2020), in *Centaurus*, 1(1), p. -.
- 2020 *Sailing School. Navigating Science and Skill, 1550-1800*, Margaret Schotte (Baltimore, John Hopkins University Press, 2019), in *Revue d’histoire des sciences*, 73(2), pp. 384-386
- 2018 *Mobilités d’ingénieurs en Europe, XVe-XVIIIe siècle*, Stéphane Blond, Liliane Hilaire-Pérez and Michèle Virol (dir.) (Rennes : PUR, 2017), in *Artefact*, 8, pp. 355-358.
 - ◇ *Mathematical Practitioners and the Transformation of Natural Knowledge in Early Modern Europe*, Lesley B. Cormack, Steven A. Walton, John A. Schuster (eds), *Studies in History and Philosophy of Science* 45 (Wiesbaden: Springer, 2017), in *Revue d’histoire des sciences*, 71(1), pp. 114-116.
 - ◇ *Les chaires et l’esprit. Organisation et transmission des savoirs au sein d’une université germanique au XVIIe siècle*, Boris Klein (Lyon, Presses Universitaires de Lyon, 2017), in *Revue d’histoire des sciences*, 71(1), pp. 123-124.

- 2014 *Mathematik im Prozess : Philosophische, Historische und Didaktische Perspektiven*, M. Rathgeb, M. Helmerich, R. Krömer, K. Lengnink and G. Nickel (éds.) (Wiesbaden: Springer, 2013), in *Essais : Revue interdisciplinaire d'Humanités*, 4, pp. 185-188.
- 2013 *The Disordered Police State, German Cameralism as Science and Practice*, Andre Wakefield (Chicago: University Press, 2009), in *Revue d'histoire des sciences*, 66(1), pp. 224-226.

Work in progress:

- ◇ Translation and commentary of the “New book on subterranean geometry” (*Neu Markscheide-Buch*) by Adam Schneider (c. 1669).

Scientific presentations and Conferences

For a complete list, see <http://morelthomas.com/publications/>

- 2022 “Artisanal Practices and Mathematics between the Ore Mountains and the Court of Dresden”, 10th Conference of the European Society for the History of Science, in the session *Scholarly and artisanal mathematics in the Early Modern Period*, Brussels (Belgium), September 7-10th.
- ◇ “‘So Fair a Subterraneous City’: Mining, Maps, and the Politics of Geometry in the Seventeenth Century ”, History of Mathematics Seminar, **Oxford** University, June 9th.
 - ◇ “The Mines and the Court: Artisanal Practices and Mathematics in Early Modern Dresden”, Princeton-Bucharest Seminar in Early Modern Philosophy, online, May 10th.
- 2021 “Géométrie, géographie et cartographie époque moderne”, Journée d'études Lhistoire des sciences aujourd'hui, **Bordeaux**, November 17th
- ◇ “ ‘Eine der schönsten Anwendungen der Geometrie’: Die Berechnung des Tiefer-Georg Stollens (1771-1799)”, Landeshistorisches Kolloquium, Universität **Göttingen**, November 10th.
 - ◇ “Prêcher la géométrie : les sermons miniers de Johannes Mathesius et Cyriacus Spangenberg”, séminaire d'histoire des mathématiques de **Lille**, March 11th.
 - ◇ “Écrire, dessiner et prêcher des pratiques mathématiques dans les mines de l'époque moderne”, séminaire “ Histoire des sources, histoire du texte”, laboratoire SPHERE, Université **Paris-Diderot**, January 14th.
- 2020 “One of Geometry’s Nicest Application”: Digging the Georg-Tiefer Stollen (1771-1799), Max-Planck Institut für Wissenschaftsgeschichte, Department III Colloquium, **Berlin**, June 2nd.
- 2019 “The Silent Rise of Practical Mathematics (1450-1686)”, IZWT, Bergische Universität Wuppertal, 11 décembre.
- ◇ “Unterirdische Mathematik. Zur Darstellbarkeit der Vermessung von Gruben und Stollen in der Frühen Neuzeit”, IZWT, Bergische Universität **Wuppertal**, 11 décembre.
 - ◇ “Writing, Drawing, and Preaching Geometry in the Early Modern German Mines”, 2019 meeting of the History of Science Society, session “Practical Mathematics in Early Modern Europe”, organized by myself, **Utrecht**, July 23-27.
 - ◇ “Résoudre par l’arithmétique ou par la géométrie : sur l’utilisation des cartes en géométrie souterraine (XVIIIe siècle)”, séminaire “Approches historiques, philosophiques et anthropologiques des nombres, de la mesure et de la mesurabilité”, laboratoire SPHERE, **Paris** 7, June 14th.
 - ◇ “Mathematik in Bergwerken der frühen Neuzeit: Wer, wie und warum?”, Ringvorlesung zur Geschichte der Mathematik, Studium Generale, TU Bergakademie **Freiberg**, February 4th.

- 2017 “Subterranean geometry and its instruments: about practical geometry in the Early Modern Period”, meeting *Mathematical Instruments between Material Artifacts and Ideal Machines: their Scientific and Social Role before 1950*, Mathematisches Institut **Oberwolfach**, December 17-23.
- ◇ “The Geometria subterranea manuscripts (1600-1750): Knowledge transmission in a practical context”, in the Symposium S 093 (Specificities of scientific or scholarly documents as a reflection of curricula) if the 25th International Congress for the History of Science, Technology and Medicine (iCHSTM), **Rio de Janeiro**, July 24th.
 - ◇ “Practical Geometry in early modern Germany: Miners and Scholars, Instruments and Theories”, seminar “Early Modern Mathematical Instruments And Their Users”, organized by Antoni Malet and Elena Ausejo, Universitat Pompeu Fabra, **Barcelone**, March 23-24.
- 2016 “Circulating mining knowledge from Freiberg to Almaden: The life and career of J.M.Hoppensack (1741-1815)”, colloquium *Sciences, savoirs et politique : Alexander von Humboldt et Aimé Bonpland entre Europe et Amérique Latine*, session organized by Jacob Vogel, **Paris**, SciencesPo / IHEAL, July 6th.
- ◇ “Subterranean geometry and its measurement units (16th-18th centuries)”, séminaire d’histoire et philosophie du laboratoire SPHERE (SAW), ‘Measurement units in the history of mathematics and beyond’, **Paris**, April 4th.
- 2015 “J.A. Scheidhauer und die Markscheidekunst: Beispiel einer Mathematisierung für die Praxis am Ende des 18. Jahrhunderts”, annual meeting of the DGGMNT (German Society for the History of Science), Technische Universität, **Berlin**, September 25-27.
- ◇ “Underground Mathematics: Manuscripts and Knowledge Circulation in the German Mining States”, 61st Annual Meeting of the Renaissance Society of America, session *The Material Culture of the Mines in Early Modern Europe* organisée par Tina Asmussen and Henrike Haug, **Berlin**, March 26-28.
- 2014 “Usefulness and practicability of Mathematics: German Mining Academies in the 18th century”, workshop The Making of Useful Knowledge, MPIWG, **Berlin**, October 30-31.
- ◇ “Schoolteaching in the *Bergstaat*: mathematics in the Ore Mountains of Saxony (1750-1850)”, 6th International Conference of the ESHS, in the session *Local supply of scientific and technical education*, Portugal, **Lisbon**, September 4-6.
- 2013 “Mathematics in the Mines: a Biographical Sketch of the *Markscheider* J.A. Scheidhauer (1722-1784)”, during the 24th Novembertagung on the History of Mathematics, De Morgan House, **London**, November 20-22.
- ◇ “Mathematics in polytechnic schools in the German-speaking area”, in the Symposium S 011 of the 24th International Congress for the History of Science, Technology and Medicine (iCHSTM), **Manchester**, July 22-28.

Scientific and Administration Service

- 2016 – present Board member of the *Société française d’histoire des sciences et des techniques* (SFHST). From 2016 to 2020, in charge of the website and communication <https://sfhst.hypotheses.org/>, from 2020 to present, president of the society.
- Member of the editorial board of *Centaurus*, the official journal of the European Society for the History of Science, of the *Cahiers François Viète*, of the column *Histoire des mathématiques* for the website *Images des maths*.
 - Reviewer for *Centaurus*, *Philosophia Scientiæ*, *Perspective on Science*, *Technikgeschichte*, *Mathematical Reviews*.

Awards, Honors and Grants

- 2018 *Grattan-Guinness Archival Travel Grant* for a book project on the history of subterranean geometry.

- ◇ DAAD (*Deutscher Akademischer Austauschdienst*) research grant for a two-months archive stay in Germany (July-August 2018).
- 2015 *Professor Ludwig Weickmann Foundation Prize*, Universität Leipzig for the dissertation “*Mathématiques et politiques scientifiques en Saxe (1765-1851). Institutions, acteurs et enseignements*”.
- 2014 Dissertation Prize, Université de Bordeaux (IdEx), category “Sciences Humaines et Sociales” (SHS), for the dissertation “*Mathématiques et politiques scientifiques en Saxe (1765-1851). Institutions, acteurs et enseignements*”.
 - ◇ Travel grant from the Fritz Thyssen foundation for a research stay at the Slovakian National Archive (Banskiavnica, July).
 - ◇ Travel grant from the DAAD (*Deutscher Akademischer Austauschdienst*) to attend the International Conference of the European Society for the History of Science, Lisbon, September.
- 2013-2016 Research grant attributed by the *Berlin Center for the History of Knowledge* (MPI, HU, TU and FU Berlin), to work as an invited researcher at the Technical University Berlin.
 - ◇ Travel grant for young researchers, attributed by the *Comité National Français d’Histoire et de Philosophie des Sciences* (CNFHPS) to attend the International Congress of History of Science, Technology and Medicine in Manchester, 2013.
- 2010 Research Grant from the Institut Français d’Histoire en Allemagne (IHFA), for a two-month internship at the MPIWG.
 - ◇ Award “*Découverte Science*” de l’Académie Nationale des Sciences, Belles-Lettres et Arts de Bordeaux, for the Master’s degree work : “*Georg Cantor et la théorie des ensembles : origine, développement et postérité d’une théorie spéculative*”.