

# Fabian C. Moss

## Curriculum Vitae

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## Employment

- 2020–today **Postdoctoral Researcher**,  
*École Polytechnique Fédérale de Lausanne (EPFL)*, Digital and Cognitive Musicology Lab (DCML).  
Lausanne, Switzerland
- 2017–2019 **Doctoral Assistant**,  
*École Polytechnique Fédérale de Lausanne (EPFL)*, Digital and Cognitive Musicology Lab (DCML).  
Lausanne, Switzerland
- 2015–2017 **Doctoral Assistant**,  
*Technische Universität Dresden (TUD)*, Dresden Music Cognition Lab (DMCL).  
Dresden, Germany
- 2012–2014 **Conductor and vocal coach for children's choirs**,  
*Musikschule Leverkusen*.  
Leverkusen, Germany

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## Education

- 2017–2019 **École Polytechnique Fédérale de Lausanne (EPFL)**,  
*Digital and Cognitive Musicology Lab (DCML)*, PhD student.  
Lausanne, Switzerland
- Jan–Mar 2016 **Massachusetts Institute of Technology (MIT)**,  
*Department of Linguistics and Philosophy*, Visiting Student.  
Cambridge, MA, USA
- 2015–2017 **Technische Universität Dresden (TUD)**,  
*Dresden Music Cognition Lab (DMCL)*, PhD student.  
Dresden, Germany
- Jan–Apr 2012 **Escola Superior de Musica de Catalunya (ESMUC)**,  
ERASMUS Exchange Student.  
Barcelona, Spain
- 2011–2013 **Hochschule für Musik und Tanz Köln (HfMT)**,  
*Musicology*, Master of Arts.  
Cologne, Germany
- 2008–2013 **Hochschule für Musik und Tanz Köln (HfMT)**,  
*Music Education (Piano Major)*, Staatexamen (State Examination).  
Cologne, Germany
- 2006–2016 **Universität zu Köln (UzK)**,  
*Mathematics and Educational Sciences*, Staatexamen (State Examination).  
Cologne, Germany
- 2002–2005 **Friedrich-Wilhelm-Gymnasium Köln (FWG)**,  
Abitur (German High School Diploma).  
Cologne, Germany

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## Theses

- PhD *Transitions of Tonality: A Model-Based Corpus Study* (2019)  
Supervisors Martin Rohrmeier & Markus Neuwirth, DCML, EPFL  
MA “*Theorie der Tonfelder*” nach Simon und “*Neo-Riemannian Theory*”:  
*Systematik, historische Bezüge und analytische Praxis im Vergleich* (2012)  
Supervisor Hans Neuhoﬀ, HfMT

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## Publications

### Journal Articles and Conference Papers

- in review Lieck, R., **Moss, F. C.**, & Rohrmeier, M. The Tonal Diﬀusion Model.  
Harasim, D., **Moss, F. C.**, Ramirez, M., & Rohrmeier, M. Cognitive modeling reveals history of major and minor in Western classical music.
- in prep. Viacoz, C., Harasim, D., **Moss, F. C.**, & Rohrmeier, M. Wavescapes: A Visual Hierarchical Analysis of Tonality Using the Discrete Fourier Transformation.  
**Moss, F. C.**, Noll, T., & Rohrmeier, M. Surfing the Chromatic Waves: Detecting Tone Fields Using Discrete Fourier Analysis.  
**Moss, F. C.**, Lieck, R., & Rohrmeier, M. Tracing Historical Changes in Tonality with the Tonal Diﬀusion Model.  
**Moss, F. C.**, & Rohrmeier, M. The Line of Fifths and the Coevolution of Tonal Pitch-Classes.  
**Moss, F. C.**, & Rohrmeier, M. Discovering Musical Structures Using Latent Dirichlet Allocation.
- 2020 **Moss, F. C.**, de Souza, W. F., & Rohrmeier, M. Harmony and Form in Brazilian Choro: A Corpus-Driven Approach to Musical Style Analysis. *Journal of New Music Research*.
- 2019 **Moss, F. C.**, Neuwirth, M., Harasim, D., & Rohrmeier, M. (2019). Statistical characteristics of tonal harmony: A corpus study of Beethoven’s string quartets. *PLOS ONE*, 14(6), e0217242. <https://doi.org/10.1371/journal.pone.0217242>  
Landnes, K., Mehrabyan, L., Wiklund, V., Lieck, R., **Moss, F. C.**, & Rohrmeier, M. (2019). A Model Comparison for Chord Prediction on the Annotated Beethoven Corpus. In I. Barbancho, L. J. Tardón, A. Peinado, & A. M. Barbancho (Eds.), *Proceedings of the 16th Sound and Music Computing Conference (SMC 2019)* (pp. 250–254). Málaga, Spain.  
Popescu, T., Neuser, M. P., Neuwirth, M., Bravo, F., Mende, W., Boneh, O., **Moss, F. C.**, & Rohrmeier, M. (2019). The pleasantness of sensory dissonance is mediated by musical style and expertise. *Scientific Reports*, 9(1), 1070. <https://doi.org/10.1038/s41598-018-35873-8>
- 2018 Neuwirth, M., Harasim, D., **Moss, F. C.**, & Rohrmeier, M. (2018). The Annotated Beethoven Corpus (ABC): A Dataset of Harmonic Analyses of All Beethoven String Quartets. *Frontiers in Digital Humanities*, 5(July), 1–5. <https://doi.org/10.3389/fdigh.2018.00016>
- 2017 **Moss, F. C.** (2017). [Review of David Huron. Voice Leading: The Science behind a Musical Art]. *Music Theory & Analysis*, 4(1), 119–130. <https://doi.org/10.11116/MTA.4.1.7>
- 2014 **Moss, F. C.** (2014). Tonality and functional equivalence: A multi-level model for the cognition of triadic progressions in 19th century music. In *International Conference of Students of Systematic Musicology – Proceedings* (pp. 1–8). London, UK.

### Datasets

- 2020 **Moss, F. C.**, Neuwirth, M., & Rohrmeier, M. (2020). Tonal Pitch-Class Counts Corpus (TP3C) (Version 1.0.0) [Data set]. *Zenodo*. <http://doi.org/10.5281/zenodo.3600088>
- 2018 **Moss, F. C.**, de Souza, W. F., & Rohrmeier, M.. (2018). Choro Songbook Corpus (Version 1.0) [Data set]. *Zenodo*. <https://doi.org/10.5281/zenodo.1442765>.

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## Talks, Conference Presentations, Posters, and Workshops

- 2020 **Moss, F. C.** *Workshop: Digital Humanities - A Case Study in Music History* International Conference of Students of Systematic Musicology, York University, September 15–17, 2020, York, UK.
- Moss, F. C.** *Discovering the line of fifths in a large historical corpus.* Future Directions of Music Cognition, The Ohio State University, May 10–14, 2020, Columbus, OH.
- Moss, F. C.** *Computational Musicology and the Digital Humanities: Problems, Practices, and Prospects.* CRETA-Werkstatt #9, Center for Reflected Text Analytics, University of Stuttgart, February 18, 2020, Stuttgart, Germany.
- 2019 **Moss, F. C.** *Transitions of Tonality: Perspectives on the Historical Changes of Tonal Pitch Relations from Computational Musicology, Music Theory, and the Digital Humanities.* University of Cologne, November 29, 2019, Cologne, Germany.
- Moss, F. C.** *Tracing the History of Tonality with Note Distributions.* “Corpus Research as a Means of Unlocking Musical Grammar” International Research Workshop, July 1–4, 2019, Tel-Aviv, Israel.
- Moss, F. C.** *Inferring Tonality from Note Distributions – Why Models Matter (Poster).* SEMPRES Graduate Conference 2019, Cambridge, UK.
- Moss, F. C.** *Analyzing Tonality with Note Distributions.* First Swiss Digital Humanities Student Exchange DHX2019, Basel, Switzerland.
- 2018 **Moss, F. C.**, Souza, W. F. & Rohrmeier, M. *Harmony and Form in Brazilian Choro: A Corpus Study.* 15th International Conference on Music Perception and Cognition & 10th triennial conference of the European Society for the Cognitive Sciences of Music, Graz, Austria.
- Aitken, C., O'Donnell, T. & Rohrmeier, M. [Poster presented by **Moss, F. C.**]. *A Maximum Likelihood Model for the Harmonic Analysis of Symbolic Music.* 15th Sound and Music Computing Conference “Sonic Crossings”. Limassol, Cyprus.
- Moss, F. C.** *Corpus Research in Digital Musicology* (Talk and Tutorial). Seminar “Willkommen in der Matrix: Digitale Anwendungen für die Musikanalyse in Theorie und Praxis”, University of Basel, Basel, Switzerland.
- Harasim, D., **Moss, F. C.** & Ramirez, M. *A Brief History of Tonality* (Poster). Applied Machine Learning Days, EPFL, Switzerland.
- 2017 **Moss, F. C.** *Formal Grammars and Ambiguity in Extended Tonality.* Workshop and Symposium on Schenkerian Analysis “Wege der Kreativität – Zwischen Erfindung und Rekonstruktion”, Universität der Künste, Berlin, Germany.
- Moss, F. C.**, Souza, W. F. & Rohrmeier, M. *Brazilian Choro: A New Data Set of Chord Transcriptions and Analyses of Harmonic and Formal Features.* 17. Jahreskongress der Gesellschaft für Musiktheorie (GMTH) & 27. Arbeitstagung der Gesellschaft für Populärmusikforschung (GfPM) “Populäre Musik und ihre Theorien: Begegnungen – Perspektivwechsel – Transfers”, Graz, Austria.
- Moss, F. C.**, Harasim, D., Neuwirth, M. & Rohrmeier, M. *Beethovens Streichquartette – ein XML-basierter Korpus harmonischer Analysen in einem neuen Annotationssystem.* Jahrestagung der Gesellschaft für Musikforschung, Kassel, Germany.
- Moss, F. C.**, Rohrmeier, M. *Integrating Transformational and Hierarchical Models of Extended Tonality.* 9th European Music Analysis Conference (EuroMAC), Strasbourg, France.
- Rom, U., Jeßulat, A., **Moss, F. C.** & Guter, I. *Ambiguity, Illusion & Timelessness in Late and Post-Tonal Harmony.* Panel discussion at the 9th European Music Analysis Conference (EuroMAC), Strasbourg, France.
- Moss, F. C.** *Musik und Sprache.* Talk for Student Association “Denkzettel”, TUD, Dresden, Germany.
- Moss, F. C.**, Rohrmeier, M. & Bravo, F. *Emotional Associations Evoked by Structural Properties of Musical Scales and Abstract Visual Shapes.* KOSMOS Dialogue “Music, Emotion, and Visual Imagery”, Berlin, Germany.

- Harasim, D., **Moss, F. C.**, Neuwirth, M. & Rohrmeier M. *Beethoven's String Quartets: Introducing an XML-Based Corpus of Harmonic Labels Using a New Annotation System*. Music Encoding Conference, Tours, France.
- 2016 **Moss, F. C.** *Extended Tonality: Theoretical Challenges and their Relation to the Neuroscientific Study of Musical Syntax*. Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany.
- Moss, F. C.**, Rohrmeier, M. *Structural Ambiguities in Language and Music* (Poster). Helsinki Summer School for Cognitive Neuroscience 2016 (HSSCN 2016).
- Moss, F. C.**, Rohrmeier, M. *A grammatical approach to tension-resolution patterns in extended tonal harmony*. Meeting of the Computational Cognitive Science Group, Massachusetts Institute of Technology, Department of Brain and Cognitive Sciences, Cambridge, USA.
- Moss, F. C.**, Rohrmeier, M. *Towards a syntactic account for harmonic sequences in extended tonality*. Syntax Square Meeting, Massachusetts Institute of Technology, Department of Linguistics and Philosophy, Cambridge, USA.
- Moss, F. C.** *Syntax of Extended Tonality: Towards a Grammar of Generalized Harmonic Functions*. Music Theory Colloquium, Boston University, College of Fine Arts, School of Music, Boston, USA.
- Moss, F. C.** *Generalizing Harmonic Functions: A Grammatical Approach to Extended Tonality*. Yale University, Department of Music, New Haven, USA.
- Moss, F. C.** & Harasim, D. *Extended Tonality and Music Cognition*. Symposium "Towards a World Music Theory", University of Hamburg, Institute for Systematic Musicology, Hamburg, Germany.
- Moss, F. C.** *Music Cognition and Extended Tonality: Theoretical Challenges and Empirical Implications*. Research Colloquium, University of Cologne, Cologne, Germany.
- 2015 **Moss, F. C.** *On generative modelling of musical form*. Seminar "Mathematics and Music", TUD, Dresden, Germany.
- Moss, F. C.** *'The terror of sanctity.' Tonal cues for resolving dramatic ambiguities in Wagner's Parsifal*. Seminar "Understanding Musical Structures", TUD, Dresden Germany.
- 2014 **Moss, F. C.** *Tonality and functional equivalence: A multi-level model for the cognition of triadic progressions in 19th century music*. International conference of Students of Systematic Musicology, Goldsmiths University, London, UK.
- Moss, F. C.** *Language, music and the brain: a resource-sharing framework (Patel, 2012)*. Seminar "Cognitive Neuroscience of Music", Institut for Musicology, University of Cologne, Cologne, Germany.

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## Awards and Scholarships

- 2016–2107 **Konrad Adenauer Foundation**, PhD Scholarship.
- Aug 2016 **TUD Graduate Academy**, Travel Award.
- Jan–Mar 2016 **Deutscher Akademischer Austauschdienst (DAAD)**, *great!ipid4all* (group2group exchange for academic talents).
- Sep 2014 **Society for Education and Music Psychology (SEMPRE)**, Travel Award.
- Jan–Apr 2012 **European Union (EU)**, ERASMUS Scholarship.
- 2008–2013 **Konrad Adenauer Foundation**, Student Scholarship.

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## Teaching and Supervision

- 2020 Teaching Assistant, "Musical improvisation, invention and creativity", EPFL.  
Lecture "Musical Diversity across Historical Time" in class "Digital Musicology", EPFL.
- 2019 Supervision of an MSc student project for "Machine Learning" course, EPFL.
- 2018 Teaching Assistant, "Digital Musicology" (MSc; tutorials and exercises), EPFL.

- Supervision of three MSc student projects for “Machine Learning” course, EPFL.
- Supervision of four MSc student projects for “Digital Musicology” course, EPFL.
- 2017 Peer-mentoring visiting PhD student in music theory/composition, TUD.
- 2016–2017 “Reading Class Musicology”, (BA; with Christoph Wald), TUD.
- 2015–2016 “Introduction to Musicology”, (BA; with Christoph Wald), TUD.
- 2015 Joint supervision of interdisciplinary project of technical design undergraduate, TUD.
- 2013 “Academic Writing and Research Techniques” (MA), HfMT.

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## Administration

### Organization

- 2019 Workshop “Schenkerian and Tonfeld Theory for Music Analysis”, DCML, EPFL.  
First Swiss Digital Humanities Exchange, in collaboration with University of Basel.
- 2015 Co-organization of lecture series “Systematic Musicology: Perception and Cognition of Music”, DMCL, TUD.
- 2013 Co-organization of the international conference “Musical Meter in Comparative Perspective”, HfMT.

### Reviewer Activity

*Music and Science, Empirical Musicology Review, Music Theory and Analysis, Transactions of the International Society of Music Information Retrieval, International Conference of Students of Systematic Musicology.*

### Memberships

- since 2020 Co-Chair of the Music Analysis Interest Group of the *Music Encoding Initiative* (MEI).
- since 2019 UNIL-EPFL Centre for Digital Humanities (dhCenter); EPFL Data Champions Community; Gesellschaft für Musikforschung (GfM)
- 2018–2019 Co-founder and vice-president of the Digital Humanities Student Association *ddelta* at EPFL.
- since 2017 Gesellschaft für Musiktheorie (GMTH).

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## Relevant Courses

### Workshops and Summer Schools

- 2019 Workshop “Research Data Management: introduction”, EPFL Library, October 10, 2019.
- 2018 Workshop “Voice-leading schemata in theory, corpus research, and practical composition (Compose your own Chopin!)”, EPFL, September 18–20, 2018  
Symposium “Archiving Intangible Cultural Heritage & Performing Arts: A Symposium and Summer School for Living Traditions”, EPFL, August 6–7, 2018
- 2017 Workshop “Meaning in Music: Bridging Musicological, Linguistic, and Neuroscientific Perspectives”, EPFL, December 4–6, 2017.  
Summer School “Exploring Edges: An International Colloquium between the Digital Humanities, Architecture, Artistic Research, and Critical Technical Practice”, EPFL, July 11–14, 2017.
- 2016 Summer School “Cognitive Neuroscience of Music”, University of Helsinki, August 11–17, 2016

### University Courses

- 2017 “Applied Data Analysis” (Robert West), EPFL.
- 2016 “Introduction to Schenkerian Theory” (Oliver Schwab-Felisch), TUD; “Cognitive Science” (P. Sinha, J. Tenenbaum, E. Gibson), MIT; “Computational Modeling of Phonology and Morphology” (T. O’Donnell, A. Albright), MIT.
- 2015 “Generative Modeling” (T. O’Donnell), TUD; “Introduction to Quantitative Methods for the Social Sciences” (Bernhard Schipp), TUD.
- 2012–13 “Cognitive Neuroscience of Music”, “Cognitive Musicology: Theoretical Foundations”, “Cognitive Modeling” (Uwe Seifert), UzK.

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## Skills

Languages Python, Latex, HTML/CSS; German (native), English (fluent), French, Spanish (basic).  
Utilities Git, Anaconda, Jupyter Notebook/Lab.

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## Extra-Curricular Activities

### Voice

2014–2017 Classical a-capella octet *Vokalexkursion*.  
2013–2015 Cologne Cathedral Chamber Choir.  
2012–2014 Conductor of several children's choirs at Musikschule Leverkusen.  
2011–2013 Cologne Conservatory Chamber Choir.  
2008–2013 Pop a-capella group *gezwungenermaßen*.

### Instruments

since 1993 Piano  
since 1994 Guitar