

# 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*, Project “Jedem Kind seine Stimme” (JEKISS).  
Leverkusen, Germany

### 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
- 1996–2002 **Europaschule Köln, Gesamtschule Zollstock**.  
Cologne, Germany
- 1992–1996 **Katholische Grundschule Trierer Straße**.  
Cologne, Germany

### Theses

- PhD, 2019 *Transitions of Tonality: A Model-Based Corpus Study*  
Supervisors: Martin Rohrmeier & Markus Neuwirth

MA, 2012 “Theorie der Tonfelder” nach Simon und “Neo-Riemannian Theory”:  
Systematik, historische Bezüge und analytische Praxis im Vergleich  
Supervisor: Hans Neuhoﬀ

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## Publications ([OA] = Open Access)

### Journal Articles and Conference Papers

- submitted [OA] Moss, F. C., & Rohrmeier, M. Discovering Tonal Profiles Using Latent Dirichlet Allocation.
- in review [OA] Harasim, D., Moss, F. C., Ramirez, M., & Rohrmeier, M. Exploring the foundations of tonality: Statistical cognitive modeling of modes in the history of Western classical music.
- [OA] Viacoz, C., Harasim, D., Moss, F. C., & Rohrmeier, M. Wavescapes: A Visual Hierarchical Analysis of Tonality Using the Discrete Fourier Transformation.
- 2020 [OA] Lieck, R., Moss, F. C., & Rohrmeier, M. The Tonal Diﬀusion Model. *Transactions of the International Society of Music Information Retrieval*, 3(1), 153–164. <https://doi.org/10.5334/tismir.46>
- [OA] Moss, F. C., de Souza, W. F., & Rohrmeier, M. (2020). Harmony and Form in Brazilian Choro: A Corpus-Driven Approach to Musical Style Analysis. *Journal of New Music Research*, 49(5), 416–437. <https://doi.org/10.1080/09298215.2020.1797109>
- 2019 [OA] Moss, F. C. (2019). *Transitions of Tonality: A Model-Based Corpus Study*. Doctoral dissertation. École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. <https://doi.org/10.5075/epfl-thesis-9808>
- [OA] 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>
- [OA] 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.
- [OA] 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 [OA] 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 [OA] 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.
- 2011 [OA] Moss, F. C. *Albert Simons Theorie der Tonfelder und John Cloughs Flip-Flop Circles im Vergleich*. Zenodo. <http://doi.org/10.5281/zenodo.3944462>

### As editor

- forthcoming [OA] Special Issue on “Open Science in Musicology” in *Empirical Musicology Review*, together with Markus Neuwirth.

### Datasets and Code

- 2020 [OA] Moss, F. C., Neuwirth, M., & Rohrmeier, M. (2020). Tonal Pitch-Class Counts Corpus (TP3C) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.3600080>
- 2019 [OA] Moss, F. C., Loayza, T., & Rohrmeier, M. (2019). pitchplots. Zenodo. <https://doi.org/10.5281/zenodo.3265392>
- 2018 [OA] Moss, F. C., de Souza, W. F., & Rohrmeier, M. (2018). Choro Songbook Corpus [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.1442764>

### Blogposts

- 2020 “A computational model for note distributions in musical pieces”: <https://www.epfl.ch/labs/dcml/computational-model-note-dists/>
- “Tracing historical changes in the exploration of tonal space”: <https://www.epfl.ch/labs/dcml/tracing-historical-changes/>

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## Talks, Conference Presentations, Posters, and Workshops

### Workshops

- 2020 **Moss, F. C.** *Data-Driven Music History*. International Conference of Students of Systematic Musicology, York University, September 14, 2020, York, UK [online].
- 2018 **Moss, F. C.** *Corpus Research in Digital Musicology*. Seminar “Willkommen in der Matrix: Digitale Anwendungen für die Musikanalyse in Theorie und Praxis”, University of Basel, Basel, Switzerland.

### Talks

- 2020 **Moss, F. C.** *Analyzing musical pieces on the Tonnetz using the pitchplots Python library*. 20. Jahreskongress der Gesellschaft für Musiktheorie (GMTH), Hochschule für Musik Detmold, October 1–4, 2020, Detmold, Germany [online].
- 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*. 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.

## Teaching

- Fall 2020 “Introduction to Musical Corpus Studies”, UzK.
- Spring 2020 “Musical improvisation, invention and creativity”, teaching assistant, EPFL.
- “Musical Diversity across Historical Time”, lecture in class “Digital Musicology”, EPFL.
- Spring 2018 “Digital Musicology”, teaching assistant, EPFL.
- 2016–2017 “Reading Class Musicology”, with Christoph Wald, TUD.
- 2015–2016 “Introduction to Musicology”, with Christoph Wald, TUD.
- Spring 2013 “Academic Writing and Research Techniques”, HfMT.

## Supervision

- Spring 2020 Co-supervision of Digital Humanities MSc thesis.
- Fall 2019 Supervision of Machine Learning graduate student project, EPFL.
- Fall 2018 Supervision of three Machine Learning graduate student projects, EPFL.
- Spring 2018 Supervision of four Digital Musicology graduate student projects, EPFL.
- Spring 2017 Peer-mentoring visiting PhD student in music theory/composition, TUD.
- Fall 2015 Joint supervision of interdisciplinary project of technical design undergraduate, TUD.

## Funding

### Project grants

- 2021 **Collaborative Research on Science and Society (CROSS)**, *Digitizing the Dualism Debate: A Case Study in the Computational Analysis of Historical Music Theory Sources*.  
PIs: Fabian C. Moss, François Bavaud (Université de Lausanne), CHF 59’565

### Awards and scholarships

- nominated EPFL Doctorate Award
- 2016–2017 Konrad Adenauer Foundation, PhD Scholarship.

- Aug 2016 TUD Graduate Academy, Travel Award.
- Jan–Mar 2016 Deutscher Akademischer Austauschdienst (DAAD), great!<sup>ipid4all</sup> (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.

## Administration

### Organization

- 2019 Workshop “Schenkerian and Tonfeld Theory for Music Analysis”, 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”, 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, Zeitschrift der Gesellschaft für Musiktheorie [Journal of the German-speaking Society of Music Theory], International Conference of Students of Systematic Musicology.

### Responsibilities and 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 *dhelta* at EPFL.
- since 2017 Gesellschaft für Musiktheorie (GMTH).
- 2012–2013 Financial officer for General Students’ Committee [Finanzreferent AStA], HfMT.

## Media coverage

- Aug 2020 “Bringing computational music analysis beyond the traditional canon”  
<https://actu.epfl.ch/news/bringing-computational-music-analysis-beyond-the-t/>
- Jun 2019 “A Data Science Analysis Finds Beethoven’s Style In His String Quartets”  
<https://www.forbes.com/sites/evaamsen/2019/06/06/a-data-science-analysis-finds-beethovens-style-in-his-string-quartets/>  
“Decoding Beethoven’s music style using data science”  
<https://actu.epfl.ch/news/decoding-beethoven-s-music-style-using-data-scienc/>
- Mar 2019 “Creating connections in a growing digital humanities community”  
<https://actu.epfl.ch/news/creating-connections-in-a-growing-digital-humani-2/>

## Workshops and summer schools attended

- 2020 Workshop “Musikalische Schrift und Digitalität”, Basel, Switzerland, September 22–23.  
*edirom* summer school (text and music encoding). University of Paderborn. Paderborn, Germany, August 31–September 4 [online].
- 2019 Workshop “Research Data Management: introduction”, EPFL Library, October 10.
- 2018 Workshop “Voice-leading schemata in theory, corpus research, and practical composition (Compose your own Chopin!)”, EPFL, September 18–20.  
Symposium “Archiving Intangible Cultural Heritage & Performing Arts: A Symposium and Summer School for Living Traditions”, EPFL, August 6–7.
- 2017 Workshop “Meaning in Music: Bridging Musicological, Linguistic, and Neuroscientific Perspectives”, EPFL, December 4–6.  
Summer School “Exploring Edges: An International Colloquium between the Digital Humanities, Architecture, Artistic Research, and Critical Technical Practice”, EPFL, July 11–14.
- 2016 Summer School “Cognitive Neuroscience of Music”, University of Helsinki, August 11–17.

## Skills

- Languages Python, Latex, HTML/CSS  
German (native), English (fluent), French (conversational), Spanish (basic)

Utilities   Git, GitHub, Jupyter Notebook/Lab

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## Musical activities

2014–2017   Classical vocal octet *Vokalexkursion*  
2013–2015   Cologne Cathedral Chamber Choir  
2011–2013   Cologne Conservatory Chamber Choir

2008–2013   Pop a-capella group *gezwungenermaßen*  
since 1994   Guitar  
since 1993   Piano