Within the Cluster of Excellence ‘Center for Advancing Electronics Dresden’ (cfaed) the newly established Chair of Network Dynamics offers a position as Research Associate / Software Engineer / Postdoc “Theoretical Physics of Networked Dynamical Systems” (Subject to personal qualification employees are remunerated according to salary group E 13 TV-L) starting at 01.12.2019. The fixed-term position is limited until 30.11.2022. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG)

Position
The Chair of Network Dynamics of Prof. Dr. Marc Timme advances our conceptual understanding of collective phenomena emerging in network dynamical systems across fields. It bridges fundamental topics from the Theoretical Physics of complex systems to applied questions on system function in biology, engineering, and sustainability. Through mathematical, theoretical and computational multidisciplinary research and development it addresses pressing real world challenges of sustainable development. The current position to be filled focusses on data-driven analysis, computational modeling, optimization and design of flexible and networked mobility systems as well as studies systemic sustainability (sustainability).

The successful candidate will contribute to world-leading research and teaching on collective phenomena in complex dynamical systems and theoretical physics; the work is driven by the aim of revealing fundamental conceptual, mathematical, and theoretical insights, is inspired by and aims at feeding back to natural and human-made systems such that it often has applications to future-compliant forms of computing, mobility or sustainability. The candidate will also develop mathematical and computational tools; mine, analyze, structure and consolidate experimental and numerical data; help establishing collaborations within TU Dresden and beyond; actively engage in theoretical physics and cross-disciplinary teaching and outreach, take responsibility for organizational tasks and/or IT and systems administration tasks within the Chair and beyond.

Requirements
We aim at attracting the best talents from the exact sciences between statistical physics, nonlinear dynamics and applied mathematics. Hence, we expect:

- outstanding university and doctoral degree in theoretical physics or closely related areas,
- some experience as a postdoctoral researcher or equivalent
- experience in bridging theoretical and computational basic research to real world applications, e.g. with industry
- experience in software architecture, development and deployment
- advanced analytical, computational and IT knowledge and skills required for the above tasks
- very good interpersonal and communication skills; in particular, the ability to effectively work in collaborative research efforts, the ability to write and present concisely,
- an independent, target- and solution-driven work attitude,
- inter- and multidisciplinary thinking,
- strong motivation and interest to join one of the most ambitious interdisciplinary research teams in the field,
- very good command of English - written and oral.

What we offer
You will join a team of enthusiastic scientists who creatively pursue their individual research agenda inspired by the cluster's innovative approach and support. Your research will be fostered by the cfaed philosophy to promote young researchers, which includes: access to state of the art research of leading academic institutes, career development, promotion of gender equality and family-friendly work environment.
Informal enquiries can be submitted to recruiting.cfaed@tu-dresden.de.
Applications from women are particularly welcome. The same applies to persons with disabilities.

Application Procedure

Your application (in English only) should include: motivation letter, CV, copy of degree certificate and proof of English language skills.
Complete applications should be submitted preferably via the TU Dresden SecureMail Portal https://securemail.tu-dresden.de by sending it as one single pdf document to recruiting.cfaed@tu-dresden.de quoting the reference number PD1909 in the subject header or alternatively to TU Dresden, cfaed, Herrn Prof. Dr. Marc Timme, Helmholtzstr. 10, 01069 Dresden, Germany. Please submit your applications by 30.10.2019 (stamped arrival date of the university central mail services applies). Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

About cfaed

cfaed is a cluster of excellence within the German Excellence Initiative. As a central scientific unit of TU Dresden, it brings together 300 researchers from the university and 10 other research institutes in the areas of Electrical and Computer Engineering, Computer Science, Materials Science, Physics, Chemistry, Biology, and Mathematics. cfaed addresses the advancement of electronic information processing systems through exploring new technologies which overcome the limits of today's predominant CMOS technology. https://cfaed.tu-dresden.de

TU Dresden

The TU Dresden is among the top universities in Germany and Europe and one of the eleven German universities that were identified as an 'elite university' in June 2012. As a modern full-status university with 14 departments it offers a wide academic range making it one of a very few in Germany.