Within the Center for Advancing Electronics Dresden (cfaed) the newly established Chair of Network Dynamics offers the following fixed-term position in the research area “Collective Nonlinear Dynamics of Networks” as

**Research Associate / PhD Student**

(Subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

**Terms:** 50% of the fulltime weekly hours, the position is a 3-year appointment. The period of employment is governed by the Fixed-Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG). The position starts as soon as possible and offers the chance to obtain further academic qualification (e.g. PhD).

The newly established 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 questions on the collective function of biological and bio-inspired systems and on self-organized solutions for engineering systems and sustainability. Through mathematical, theoretical and computational multidisciplinary research and development it addresses pressing challenges in a wide range of research areas, including the distributed computing in artificial and biological circuits, optimization and design of networked and flexible mobility systems, the collective dynamics of modern power grids, and network inverse problems of identifying and designing interaction topology underlying a given system's dynamics and function.

**Tasks**

Within the realm of the chair, we aim at understanding the transient dynamics of complex networked systems and their optimization under socio-economic constraints.

**Requirements**

We aim at attracting the best talents from the exact sciences between statistical physics, nonlinear dynamics, mathematics, computer science, theoretical biology and engineering. Hence, we expect: an outstanding university degree in theoretical physics, applied mathematics or related areas; experience in the analysis, design or inference for collective phenomena in complex systems, ideally for network dynamical systems; sound computational knowledge and skills; 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. Experience in any of the above research topic is a plus but not required.

**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, promotion of gender equality and family-friendly work environment, an individual thesis advisory committee (TAC) for PhD students. Informal enquiries can be submitted to recruiting@cfaed@tu-dresden.de.

Applications from women are particularly welcome. The same applies to people 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 a single pdf document quoting the reference number PhD-1811 in the subject header to recruiting.cfaed@tu-dresden.de or alternatively by post to: TU Dresden, cfaed, Frau Dr. P. Grünberg, Helmholtzstr. 10, 01069 Dresden, Germany. Please submit your applications by 17.12.2018 (stamped arrival date of the university central mail service applies). Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis

About cfaed
As a central academic unit of TU Dresden, cfaed 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. www.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 18 faculties it offers a wide academic range making it one of a very few in Germany.