

## Serdecznie zapraszamy na Seminarium Doktorskie Zakładu Fizyki Biomedycznej IFD WF UW

pt.: *Should Physicists Analyse Heart Rate?*

które wygłosi: dr Zbigniew Struzik, The University of Tokyo. ZIP UW  
Seminarium odbędzie się w języku angielskim.

Termin: czwartek, 18 marca 2021, godz. 11.15 – 12:00.

**Seminarium ma charakter otwarty. Jest przeznaczone dla studentów a w tym magistrantów, magistrów a w tym doktorantów, doktorów, pracowników oraz gości.**

### Streszczenie

It is perhaps no wonder that physicists deeply involved in the theory of universality approached the challenge of systemic complexity of biological origin, that of heart rate regulation. The dynamic complexity of our own life-perpetuating system – the cardiovascular regulatory system, consisting of intertwined feedback loops involving cardiac and baroregulation – is inherently non-trivial. Elucidation of fundamental molecular, cellular and biological mechanisms involved in this particular complex dynamical system is done by physiologists and put into practice by medical doctors. Yet physicists pursued the challenge from their own perspective – that of identifying possible universal laws governing the dynamics of the cardiac regulatory system.

The origin of these laws, however, remains somewhat of a mystery. The inherently multiscale, self-organising and adaptive regulatory feedback scenario still remains the most plausible paradigm of complexity of heart rate. Recently, this evidence has been strengthened by contributions from non-physicists who adopted the phenomenological view mainly purported by physicists. This is an exciting development, which may both signal an emerging trend of the acceptance of physicists' findings, and lead to a whole new way for physiologists and medical doctors to embrace the work and findings of physicists and apply them in their own research and practice. Going back to the question posed in the title, the benefits in fact work both ways. By tackling a real-life problem, physicists have to learn to adapt their methodology and mindset to cope with reasoning with the uncertainties and poor statistics for which life science research is known.

**W tym semestrze seminaria będą odbywały się w formie zdalnej. Dołączenie do Seminarium przez osoby spoza UW wymaga jednorazowej rejestracji w systemie**

**<https://kampus-student2.ckc.uw.edu.pl/>.**

**Link do spotkania: <https://kampus-student2.ckc.uw.edu.pl/course/view.php?id=2973>**

**Hasło dostępu dla gości (po założeniu konta): WFUW**

**Prowadzący: dr hab. Beata Brzozowska, dr hab. Piotr Suffczyński prof. ucz.**