



## Seminarium

Dziekan Wydziału ETI oraz Katedra Systemów Automatyki serdecznie zapraszają na seminarium, które odbędzie się dnia 9 października 2018 r. (wtorek) o godzinie 10:15 w sali Aud. 2 NE Wydziału Elektroniki, Telekomunikacji i Informatyki Politechniki Gdańskiej (parter nowego budynku ETI). W trakcie seminarium

### Prof. Brian D.O. Anderson

wyłosi referat na temat

### Beyond consensus and polarization: complex social phenomena in social networks

**Abstract:** Social network analysis is a rich and exciting area of interdisciplinary research that has been tackled by many different scientific communities. Much research draws on ideas of control and systems theory to infer how the opinions of a group of interacting individuals evolve, and to explain the resulting behaviour, often observed in experiments of sociologists, psychologists and the like, in terms of system dynamics concepts.

This lecture will survey several distinct recent developments of this character. We shall present an opinion dynamics model which describes how an individual's private and expressed opinions (which are not the same in general) evolve under pressure to conform to the majority opinion. In another direction we shall present new results on the recently proposed DeGroot-Friedkin model, which describes how an individual's self-confidence (termed social power) in his/her own opinion evolves over discussion of a sequence of topics. One key finding is that every individual forgets his/her perceived (i.e. initial) social power exponentially fast, even when the network topology is dynamic. Lastly, we shall describe the opinion dynamics of interacting individuals holding multiple and logically dependent opinions on a number of issues.



**Professor Brian D.O. Anderson** - the Emeritus Professor of The Australian National University and Distinguished Professor of Hangzhou Dianzi University (China) - is a truly outstanding researcher in the field of system and network theory. His research interests have included many contributions in the area of circuits, signal processing and control, and currently his work focuses on distributed control of multiagent systems, sensor network localization, and econometric modelling. He is the author of 10 internationally renowned books and more than 1100 papers in the most prestigious scientific journals (more than 65 in the past 5 years). His Hirsch index exceeds 100. Prof. Anderson is the recipient of numerous prizes, awards and distinctions, including 7 honorary doctorates, and fellowships of the Royal Society of London, Institute of Electrical and Electronic Engineers (IEEE), International Federation of Automatic Control (IFAC), Australian Academy of Science and American National Academy of Engineering.