



ÇANKAYA UNIVERSITY
FACULTY OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS

SEMINAR

Bond Graphs

- SPEAKER** : Prof. J. A. Tenreiro Machado (ISEP, Porto, Portugal)
- DATE** : 2 May , 2017
- TIME** : 15:30
- PLACE** : Çankaya University (Central Campus), R-213

Abstract

The concept of bond graphs (BG) was originated by Paynter (1961) and the idea was further developed by Karnopp, Rosenberg, Thoma, and others, so that it evolved to a systems theory. A BG is a graphical representation of a physical dynamic system. Connections in BG represent bi-directional exchange of physical energy, while those in block diagrams and signal-flow graphs represent uni-directional flow of information. BG are a powerful tool for modeling engineering systems, especially when different physical domains are involved. In fact, BG are multi-energy domain, namely, mechanical, electrical, hydraulic, and several others. BG have the concept of causality, indicating which side of a bond determines the effort and which determines the flow. BG allow the conversion of the system into a state-space representation and numerical simulation by computer packages.

All interested are cordially invited.

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