数学与系统科学研究院学术报告

报告题目：Non-Conventional Sampled-Data Control of MIMO Systems

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时间地点：3: 30 - 4:30pm, Oct. 27, Room:712, Siyuan Building

摘要：

Industrial applications of digital control require a synergy between well-designed control algorithms and carefully implemented control systems. In this presentation the problem of controlling MIMO plants where the pattern of measurements sampling and control actions delivering is not regular is tackled. The design of digital controllers should not be constrained to the simplest case of a single rate with synchronous sampling strategies. For that purpose, control design techniques under real time constraints， such as non-uniform sampling， time-delay, and resources limitations are reviewed. There is an extensive literature on these topics. Different models are reviewed and, from the control viewpoint, model-based control design techniques are reported and new algorithms are proposed.

Among the main challenges are the achievement of good performance and the avoidance of intersampling ripple. Both issues are considered and some results are discussed.

报告人简介：

Professor Pedro Albertos, past president of IFAC (the International Federation of Automatic Control) in 1999-2002, and Senior Member of IEEE, is a world recognized expert in real-time control, leading several projects in the field. Full Professor since 1975, he is currently at Systems Engineering and Control Dept. UPV, Spain. He is Doctor Honoris-Causa from Oulu University (Finland) and Bucharest Polytechnic (Rumania) and Honorary Professor at Northeastern University, Shenyang, RP China. Invited Professor in more than 20 Universities, he delivered seminars in more than 30 universities and research centers. Authored over 300 papers, book chapters and congress communications, co-editor of 7 books and co-author of “Multivariable Control Systems” (Springer 2004) and “Feedback and Control for Everyone” (Springer 2010), he is also associated editor of Control Engineering Practice and Automatica and Editor in Chief of the Spanish journal RIAI. His research interest includes multivariable control and non-conventional sampling control systems, with focus on time delays and multirate sampling patterns, being involved in the ARTIST2 Node of Excellence on Embedded Control Systems.