Goal of the project:
This project is based on interaction of different areas of partial differential equations, stochastic differential equations and dynamical systems whose common denominator is the theory of semigroups of linear operators. The main objective of the project is to study the L∞- uniqueness of some pre-generators from mathematical-physics.

The project fits in the CD priority areas 10 - Basic Sciences, subdomain 10.1 – Mathematics.

Short description of the project:
The specific objectives of the project concern the study of some theoretical problems such as the existence, uniqueness, perturbation and approximation of C0-semigroups on the dual of a Banach space, and some applications on the L∞-uniqueness of diffusions operators, which are pregenerators.

We expect that the methods presented here can be used to attack several uniqueness problems in the infinite dimensional case.

Fields of interest:
According to the 2010 Mathematical Subject Classification of A.M.S., the fields of interest are: 47D06 (one-parameter semigroups and linear evolution equation), 60J60 (diffusion processes), 81Q10 (selfadjoint operator theory including spectral analysis.

Implementation period:
14.04.2011-30.11.2012

Project implemented by:
The Department of Electrical Engineering and Industrial Informatics from „Politehnica" University of Timişoara, Romania, in partnership with the Department of Economics Defence from Military Economics Academy of Wuhan, P. R. China.

Main activities:
The first phase of execution was held between 14.04.2011-30.11.2011. The main activity in this phase was the visit of the Romanian research team at the Military Economics Academy of Wuhan, P.R. China, from October 9 to 25, 2011. The second phase of implementation took place from 1.01.2012 to 30.11.2012.

"Attitude is a little thing that makes a big difference."

Winston Churchill

The main activities in this phase were the visit of a Chinese research team at „Politehnica" University of Timişoara, Romania, in the period 10-21 June 2012, and the visit of a part of the Romanian team at Military Economics Academy of Wuhan, P.R. China, in the period 9-16 October 2012.

During these visits were conducted more research in accordance with the phase's objectives and some related activities.

Results:
The main results obtained are consistent with the objectives and reflects their performance. Some of these results were presented at international conferences and published in journals included in the ISI database or other internationally recognized databases. Another part of these results are in press or under review for publication.

Also, we have organized a Chinese-Romanian Symposium on Inter-government Joint Research.

Project in 18-19 Octobre 2011 at Wuhan and in 18-19 June 2012 at Hunedoara.

Financed through/by:
PNII Program– Capacities
Modul III – Bilateral cooperation
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Research team:
Politehnica" University of Timişoara team: L.D. Lemle, F.L. Pater, D.M. Stoica
Military Economics Academy team: Y. Jiang, Z. Guo.

Applicability and transferability of the results: We expect that the methods presented here can be used to attack several uniqueness problems in the infinite dimensional case.

As a consequence of this project, „Politehnica" University of Timişoara in cooperation with Military Economics Academy of Wuhan, University of Wuhan and Huazhong University of Science and Technology will organize the International Conference on Applied Sciences:
http://www.icoas2013.net/index.htm

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