Seminar: "Geometry&Physics"
(http://events.theory.nipne.ro/gap/index.php/seminar)

Location: Miron Nicolescu lecture hall (IMAR), 21 Calea Grivitei Street, Bucharest,

Date: Friday, 17 October 2014, 11:00 am

Title: **"Singularities and integrability of birational dynamical systems on projective plane"** - habilitation thesis

Speaker: **Dr. Stefan CARSTEA**
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Abstract: "The thesis is focused on the study of two dimensional discrete dynamical systems and their integrability. The main topic analyzed in the thesis is how singularity analysis can be used as a detector for integrability and as a tool for finding invariants and symmetries. In the first part a classification of discrete mappings which preserve an elliptic fibration is given together with some illustrative examples. In the second part it is analized the case of integrable mappings as automorphisms of relatively non-minimal rational elliptic surfaces having higher order invariants. The third part deals with the analysis of linearizable mappings which can be lifted to some analytical stable ones defined on some ruled surfaces. Blowing down exceptional curves in this case may serve as a method for finding linearization procedure. In the last part of the thesis we extend the singularity analysis to ultradiscrete case and give some examples. It is shown that singularity confinement test can be extended but it has no such power as in the discrete case. "