

*Seminar:* "Geometry&Physics@DFT"

*Location:* seminar room DFT (IFIN-HH),  
(<http://events.theory.nipne.ro/gap/index.php/seminar>)  
(<http://www.nipne.ro/indico/categoryDisplay.py?categId=5>)

*Date:* Friday, 9 January 2015, 11:00 a.m.

*Title:* **Fierz potentials and generalized G-structures**

*Speaker:* **Dr. Calin Lazaroiu**  
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*Abstract:* "I sketch the mathematical theory of cosmooth generalized (or singular) G-structures, which extends the theory of cosmooth generalized distributions, illustrating it with a few results which show that such objects are ubiquitous in differential and spin geometry. In particular, cosmooth generalized G-structures provide the correct global description of general supersymmetric flux backgrounds in string theory. As an application, I show that generalized  $G_2$  and Spin(7) structures parameterize Majorana spinors on seven and eight-manifolds and that they can be described as extrema of a cubic potential which encodes the Fierz identities, a description which provides a quadratic characterization of such structures. I discuss the interpretation of these results through deformation quantization and point out to applications to the deformation theory of  $G_2$  and Spin(7) structures."