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## **Michał Szczachor: The symmetric consistent matter field coupling to Holst action with full set of topological term**

*Wednesday 5 October 2011 17:00 (45 minutes)*

“Symmetries can preserve some physical properties”. In the talk it will be emphasized how the symmetries of the theory can prevent physical properties which one can expected. In particular the Holst action with enlarged symmetries as well as a matter coupling will be discussed. The MacDowell-Mansuri construction will be used as a nice mathematical method to add extra symmetries like supersymmetry or Maxwell-AdS symmetry. By this construction the gravitino field or constant electromagnetic field will be introduced. Also another matter fields will be added to Holst action. It will be shown that as a consequences of use the supersymmetry, the Immirzi parameter does not occur in classical dynamics.