Mathematical Physics
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I N V I T A T I O N

as part of the Mathematical Physics Theory Seminar

to the talk by

Glenn BARNICH
(ULB Brussels)

on

"Model spaces as constrained Hamiltonian systems I. Application to SU(2)"

Abstract:

Motivated by group-theoretical questions that arise in the context of asymptotic symmetries in gravity, we study model spaces and their quantization from the viewpoint of constrained Hamiltonian systems. More precisely, we propose a definition of a model space for a generic Lie group G as a suitable second class constrained system associated to the cotangent bundle $T^{*}G$. Before turning to the non-compact infinite-dimensional groups relevant in the gravitational setting, we work out all details in the simplest case of $\mathrm{SU}(2)$. Besides recovering well-known results on the quantum theory of angular momentum from a unified perspective, the analysis sheds some light on the definition and properties of spin-weighted/monopole spherical harmonics.

Time: Tuesday, 4 March 2025, 2:00 p.m.

Location: Erwin-Schrödinger Lecture Hall, 1090 Vienna, Boltzmanngasse 5, 5th floor

sgd. S. Fredenhagen, M. Sperling