Oklahoma State University

Lie Groups Seminar

Title

On differential symmetry breaking operators from S^3 to S^2

Speaker: Victor Perez-Valdez, Ryukoku University
Date: Mar 11, 2026
Time: 6:00 PM
Room: MSCS 509

Abstract: Any equivariant irreducible vector bundle for the conformal group $SO_0(4,1)$ on the 3-sphere S^3 is parametrized by an odd number ($= 2N+1$) and a complex number λ. On the other hand, any equivariant irreducible vector bundle for the conformal group $SO_0(3,1)$ on the 2-sphere S^2 is a line bundle, and is parametrized by an integer number m and a complex number ν.
In the present talk, we consider the problems of construction and classification of all differential operators, that are symmetry breaking operators with respect to the conformal pair $SO_0(4,1) \supset SO_0(3,1)$, from a vector bundle V_λ^{2N+1} over the 3-sphere to a line bundle $\mathcal{L}_{m,\nu}$ over the 2-sphere:

$$\mathbb{D} : C^\infty(S^3, \mathcal{V}_\lambda^{2N+1}) \to C^\infty(S^2, \mathcal{L}_{m,\nu})$$

In particular, we solve these problems when the parameters satisfy the condition $|m| \geq N$.
Zoom information: Join Zoom Meeting https://okstate-edu.zoom.us/j/93307031326?pwd=p1GnkiPFiHoSgfuWM0TZAMlmWNJjpS.1
Meeting ID: 933 0703 1326 Passcode: Liegroups!

This will take place over Zoom. Zoom information is in the abstract.