



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

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## Analysis and PDE Seminar

March 29, 2023  
3:00 - 4:00 p.m.  
PH 328

### Nodal sets of eigenfunctions of sub-Laplacians

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**Abstract.** Nodal sets of eigenfunctions of elliptic operators on compact manifolds have been studied extensively over the past decades. In a recent work, we initiated the study of nodal sets of eigenfunctions of hypoelliptic operators on compact manifolds, focusing on sub-Laplacians (e.g. on compact quotients of the Heisenberg group). Our results show that nodal sets behave in an anisotropic way which can be analyzed with standard tools from sub-Riemannian geometry such as sub-Riemannian dilations, nilpotent approximation and desingularization at singular points. This is a joint work with S. Eswarathasan.