## The Scasimir operator in higher spin Clifford analysis

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Clifford analysis is often described as higher dimensional version of complex analysis in the plane, and a refinement of harmonic analysis in  $\mathbb{R}^m$ . Whereas the classical literature mainly (but not solely) deals with the Dirac operator, a first-order conformally invariant differential operator inspired by physics, a recent trend is to study general higher spin Dirac operators from a function theoretical point of view.

In our lecture, we will start from the simple observation that the operators studied in Clifford analysis (in one or several vector variables) generate the orthosymplectic Lie superalgebra  $\mathfrak{osp}(1, 2k)$ , whose even part  $\mathfrak{sp}(2k)$  is the classical Lie algebra underlying harmonic analysis through Howe duality (in one or several variables). We will consider the so-called Scasimir operator  $Sc_k$  for this particular Lie superalgebra, and show how it can be used to define the aforementioned higher spin Dirac operators in a systematic way.