

2019 IBS-CALDES Special Seminar

- **Speaker** : Prof. Yong Baek Kim (Univ. of Toronto, Canada)
- **Venue** : Seminar Room #302, Science building #3

✓ **Date & Time** : Tuesday, December 3 at 4PM

✓ **Title** : Probing topological signatures in Kitaev magnets

Unambiguous identification of quantum spin liquids has been a long-standing issue both in experiments and numerical computations. In the experimental side, the conventional spectroscopic probes, such as the dynamical spin structure factor, can only detect composites of fractionalized excitations, leading to a broad continuum in energy and no sharp signatures of fractionalized excitations. We first show theoretically that two-dimensional nonlinear spectroscopy can clearly detect the fractionalized excitations using the example of the exactly solvable $S=1/2$ Kitaev spin liquids. Next we demonstrate how topological information can be obtained in the numerical simulations of non-exactly solvable spin models by constructing the tensor network wavefunction of the $S=1$ Kitaev model.