Potential PhD project in Mathematics Radboud University

**Supervisor**: Steffen Sagave

**Title project**: Spectra parametrized by orthogonal spaces

**Description**
Generalized cohomology theories give rise to algebraic invariants of topological spaces and play a central role in algebraic topology. They can be refined in several different ways, for example by taking multiplicative structures into account or by considering parametrized versions that depend on the extra data given by a continuous map to a fixed parameter space. The aim of this project is to construct and study a version of orthogonal parametrized spectra that are defined relative to an orthogonal space, that is, relative to a system of spaces parametrized by the category of real inner product spaces and linear isometric embeddings. This is expected to give a convenient framework to study highly structured parametrized ring spectra. Compared to its already existing discrete counterpart this setup will have several advantages. For example, it will have a more manageable notion of weak equivalence and allow for interesting equivariant refinements.

**Name/Contact of any collaborator(s):**