

The goal of the project is the explicit description of the category of equivariant D -modules of subregular representations of simple reductive groups. The D -modules are an important tool in analyzing the singularities of varieties (in this case the orbit closures in a given representation) as they are related to other important topological invariants of orbit closures. The particular goals to be realized are the description of stabilizers of orbits, description of the corresponding simple D -modules and the description of the A-R quivers of categories of D -modules.

The reason for carrying out this project is to analyze how the uniformity of subregular representations carries to the structure of their D -module categories. The tameness of category of D -modules observed in particular cases should generalize and this would provide an important characterization of subregular representations. This is the largest class of representations for which such an explicit classification can be carried out.