

Seminar

**Elsa Cardoso–Bihlo ,
University of Victoria**

**Monday, June 26, 2017
2:00pm, HH-3017**

Parameterization schemes with symmetry properties

ABSTRACT:

Numerical weather prediction relies on the formulation of adequate parameterization schemes for atmospheric processes which cannot be resolved by state of the art climate models. Due to the inherent problem of the limited grid resolution of models in general, the general procedure is to relate unknown physical processes which take place below the grid resolution to observable or measurable quantities. However due to the complexity of the subgrid processes, the parameterization schemes still present deficiencies in their performances. In this talk we will discuss the construction of parameterization schemes which preserve the properties of the original governing equations using methods of group classification of differential equations. This is done by assuming a general functional dependency of the subgrid unknown terms on the grid known quantities in a system of averaged differential equations leading to a system of closed differential equations which can be studied using techniques of the group analysis of differential equations.