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Stratification of the Helffer-Nourrigat Cone

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Given a sub-riemannian manifold (or singular filtrations of the tangent bundle), Androulidakis, Mohsen and Yuncken constructed a calculus adapted to the corresponding hypoelliptic problems arising from the filtration. The principal symbol of an operator then becomes a family of operators in representations of nilpotent groups, the osculating groups (there is one attached to each point of the manifold), called the Helffer-Nourrigat cone. The dimension and structure of these groups may vary from one point to another, and not all of them have to be taken into account in the cone. I will explain how to stratify this cone of representations such that each stratum becomes locally compact and Hausdorff, and how this stratification behaves when restricted to each of the osculating groups.

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