

# OPERATOR ALGEBRAS ON MANIFOLDS WITH SINGULARITIES

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ABSTRACT. We discuss an iterative approach to (pseudo-)differential operators on stratified spaces (manifolds with singularities). Examples are manifolds with conical or edge singularities, or with boundary. By iteratively forming cones and wedges we obtain configurations of any singularity order, in particular, domains with polyhedral singularities. Similarly as in the case of a manifold with smooth boundary, where the open interior gives rise to a scalar interior symbol, and the boundary to an operator-valued boundary symbol, the strata of a manifold with singularities of order  $k$  create a principal symbolic hierarchy of  $k + 1$  components. Most of those are families of operators acting over singular manifolds of singularity order  $\leq k - 1$  and depend on parameters. To manage the operators via their symbols we have to organise parameter-dependent operator algebras. The dependence on parameters may be similar to the dependence on a spectral parameter, however, non-linear in general, and holomorphic or meromorphic, or on covariables in the sense of operator-valued symbols with twisted homogeneity. Those operator functions induce a pseudo-differential analysis of a new quality. In our talk we focus on operator theories on infinite cones when the cross sections have also singularities. Those appear in the context of edge symbols which are analogues of boundary symbols. The effects from the conical exits to infinity are of particular interest.