The Calderón Projector for Fibred Cusp Operators

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Abstract. A Calderón projector for an elliptic operator P on a manifold with boundary X is a projection from general boundary data to the set of boundary data of solutions u of $Pu = 0$. Seeley proved in 1966 that for compact X and for P uniformly elliptic up to the boundary there is a Calderón projector which is a pseudodifferential operator on ∂X. We generalize this result to the setting of fibred cusp operators, a class of elliptic operators on certain non-compact manifolds having a special fibred structure at infinity. This applies, for example, to the Laplacian on certain locally symmetric spaces or on particular singular spaces, such as a domain with cusp singularity or the complement of two touching smooth strictly convex domains in Euclidean space. Our main technical tool is the ϕ-pseudodifferential calculus introduced by Mazzeo and Melrose.

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