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Spectral asymptotics for nonsmooth singular Green operators

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Singular Green operators G appear typically as boundary correction terms in resolvents for elliptic boundary value problems on a domain \Omega \subset R^n, and more generally they appear in the calculus of pseudodifferential boundary problems. In particular, the boundary term in a Krein resolvent formula is a singular Green operator. It is well-known in smooth cases that when G is of negative order -t on a bounded domain, its s-numbers have the behavior (*) s_j(G) \sim c j^{-t/(n-1)} for j\to \infty, governed by the boundary dimension n-1. In some nonsmooth cases, upper estimates (**) s_j(G) \le Cj^{-t/(n-1)} are known.

We show that (*) holds when G is a general selfadjoint nonnegative singular Green operator with symbol merely H\"older continuous in x. We also show (*) with t=2 for the boundary term in the Krein resolvent formula comparing the Dirichlet and a Neumann-type problem for a strongly elliptic second-order differential operator (not necessarily selfadjoint) with coefficients in W^1_p (\Omega) for some p>n.

Comments:	41 pages, added new Section 6 allowing nonsmooth boundaries
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