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Pleijel Nodal domain theorem for the Robin problem on Lipschitz domains

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The classical Courant nodal domain theorem states that the number of nodal domains of the k-th Dirichlet eigenfunction is bounded above by k. Pleijel later showed that only a finite number of eigenfunctions realised this bound. There have been extensions and improvements of Pleijel's result to the Robin and Neumann boundary conditions requiring boundary regularity that is much stronger than being merely Lipschitz. De Ponti, Farinelli, and Violo recently proved Pleijel's nodal domain theorem for a class of metric measure spaces, which, in particular, applies the Pleijel theorem to the Neumann problem on a Lipschitz domain. We discuss how building upon their and previous results, we can obtain Pleijel's theorem for the Robin problem with any parameter on Lipschitz domains.

This is joint work with Katie Gittins, Corentin Léna, and David Sher.

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