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ON THE SPECTRAL REPRESENTATION OF THE TRACE SPACES OF  $H^2$  AND THE SOLUTIONS TO BIHARMONIC DIRICHLET PROBLEMS ON LIPSCHITZ DOMAINS VIA MULTI-PARAMETER STEKLOV PROBLEMS

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We describe the traces of functions in  $H^2(\Omega)$  on a Lipschitz domain  $\Omega$  in terms of Fourier series associated with the eigenfunctions of multi-parameter Steklov problems, which we introduce for this specific purpose. The corresponding characterization of the trace spaces allows to represent in series the solutions to biharmonic Dirichlet problems. We also present asymptotic properties of the eigenvalues as well as explicit examples.

Joint work with Pier Domenico Lamberti (Università degli Studi di Padova)