

# **PASSIVE MEASUREMENTS\* STABILITY FOR THE INVERSE SOURCE PROBLEM WITH PASSIVE MEASUREMENTS**

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We consider the multi-frequency inverse source problem in the presence of a non-homogeneous medium using passive measurements. Precisely, we derive stability estimates for determining the source from the knowledge of only the imaginary part of the radiated field on the boundary for multiple frequencies. The proof combines a spectral decomposition with a quantification of the unique continuation of the resolvent as a holomorphic function of the frequency. The obtained results show that the inverse problem is well posed when the frequency band is larger than the spatial frequency of the source.