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Versailles, France. *Impedance imaging for thin domains.*

The material presented in this work is the result of joint works with Michael Vogelius and Hyeonbae Kang.

First, I will present a priori geometry independent bounds for the polarization tensor that occur in presence of inhomogeneities of the small volume, in the small volume fraction limit. Next, I will show that these bounds can be made more precise when some information about the "thickness" of the domain is known. Finally, I will show that these bounds allow to obtain the exact formula for thin inclusions with oscillatory boundaries. (Received February 02, 2006)