

**ON THE USE OF COMPLEX INPUT POWER IN TOPOLOGY OPTIMIZATION OF ONE-MATERIAL  
VIBRATING STRUCTURES FOR OBTAINING DISPLACEMENT ANTI-RESONANCES CLOSE TO  
FREQUENCIES OF INTEREST**

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**Abstract:** Authors present a topology optimization procedure where a weighted sum between active input power and static compliance is used to obtain anti-resonances of displacement at load points in vibrating structures, at frequencies close to those of interest. The reactive input power, converted to a relation between kinetic energy and potential energy, helps to improve the procedure. Several examples are presented to illustrate the potential of the proposed method.