

## **IIs08-013 Flexural wave attenuation using 2-D metaconcrete thick plates** Carvalho, A.L.L.(1); Miranda Jr., E.J.P.(1); Gomes, C.B.F.(1); (1) IFMA;

Metaconcrete is a mechanical metamaterial composed of a concrete matrix and periodic inclusions, consisting of a rigid core and a soft coating, which replace the standard aggregates. This configuration allows filtering the propagation of flexural waves over a certain range of frequency, called bandgaps. The aim of this paper is to investigate the dispersion relation of flexural waves in a metaconcrete thick plate through the plane wave expansion method (PWE), applying multi-layered circular inclusions in square lattice. The locally resonant bandgaps are opened up. The thickness of soft layer influence significantly the propagating modes. The results can be used for passive control of flexural vibration using 2-D periodic structures.