

On inverse crack problems in linearized elastic bodies by the Enclosure method

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Abstract

In this talk, we discuss a reconstruction issue of an inverse crack problem which may have a possible application to the nondestructive evaluation of weld verification. It is supposed that multiple linear cracks are located on the junction line between two linearized elastic plates welded together. The problem is to extract information of cracks from the observation data which is a single set of a loading surface traction and the resulted displacement field on the boundary of the joined plates. For this problem, we establish extraction formulae of location of cracks by means of the enclosure method. This research is based on a joint work with Masaru Ikehata (Hiroshima University).