# Defect localisation on a vibrating plate using Matched-Field Processing

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Résumé ou extrait : To find a defect in a ship or a submarine hull without damaging it, many solutions are possible from visual inspections to radiography by way of ultrasonic testing. This project focuses on measuring vibrations of a plate in order to apply Matched Field Processing for detecting and localising a potential defect. It was mandatory to begin with numerical simulations to know how the plate was supposed to vibrate. Then, measuring the plate vibrations, it was possible to run Matched Field Processing algorithms to localise the source. However, the lack of knowledge regarding the true property of the plate ( boundary conditions) made the results not satisfactory enough. The model had to be improved experimentally to get more accurate results. It is now possible to expect better results using the experimental model and to be able to localise a defect in other configurations.