אפקה המכללה האקדמית להנדסה בתל–אביב

סמינר מדעי היסוד

יום חמישי 3.3.2011 בשעה 13:00-14:00 בקריה ה-9

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Time Reversed Absorbing Condition: Application to Inverse Problems

Abstract

We introduce the time-reversed absorbing conditions (TRAC) in time-reversal methods. They enable one to ``recreate the past'' without knowing the source which has emitted the signals that are back-propagated. We present two applications in inverse problems: the reduction of the size of the computational domain and the determination, from boundary measurements, of the location and volume of an unknown inclusion. The method does not rely on any a priori knowledge of the physical properties of the inclusion. Numerical tests with the wave and Helmholtz equations illustrate the efficiency of the method. This technique is fairly insensitive with respect to noise in the data.

This work was made in collaboration with F. Nataf, M. Kray of University of Paris 6, France, and E. Turkel of Tel Aviv University.

מתאמים: פרופ' י. סטאנצ'סקו, ד"ר ש. מיברג, פרופ' י.גולדמן
ופרופ' ד. פישלוב

אפקה- המכללה האקדמית להנדסה בתל-אביב, מבצע קדש 38, תל-אביב