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Academy of Mathematics and Systems Science, CAS

Colloquia & Seminars

Speaker:

郭汝驰 博士,Department of Mathematics, University of California, Irvine

Inviter:

龚伟

Title:

Solve electromagnetic interface problems on unfitted meshes

Language:

chinese

Time & Venue:

2022.12.06 10:00-11:00 腾讯会议: 947-249-458

Abstract:

Electromagnetic interface problems widely appear in a lot of engineering applications, such as electric actuators, invasive detection techniques and integrated circuit, which are typically described by Maxwell equations with discontinuous coefficients. Conventional finite element methods require a body-fitted mesh to solve interface problems, but generating a high-quality mesh for complex interface geometry is usually very expensive. Instead, using unfitted mesh finite element methods can circumvent mesh generation procedure, which greatly improves the computational efficiency. However, the low regularity of Maxwell equations makes its computation very sensitive to the conformity of the approximation spaces. This very property poses challenges on unfitted mesh finite element methods, as most of them resort to non-conforming spaces. In this talk, we will present our recent progress including several methods for this topic.

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