

CASTS Talk

Some experiences on calculating complex flow problems using moving and deforming grids

2015 - 01 - 22 (Thu.)

15:00 - 17:00

308, Mathematics Research Center Building (ori. New Math. Bldg.)

Computational Fluid Dynamics (CFD) analysis is finding increasingly widespread use from automotive industry to medical field. The application of CFD to complex configurations for design purposes, however, is still a long way from being considered routine. In particular, Grid generation process tends to be the most time consuming task in CFD procedures, since it usually requires manual operation. For complex geometry problems, the time required for the grid generation increases more. To tackle this problem, one of the most effective ways is to make it automatic. Broadly speaking there are two types of grid-generation techniques for automatic grid generation: moving/translational grid and deforming grid.

In this talk, the presentation will begin with the basic concept of automatic grid generation and cover the study on how to develop and implement automatic grid techniques from a simple geometry to a complex geometry, such as a wing in motion with respect to varying angle of attack and a mechanical device in vibrational motion, in various flow phenomena.



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