

## Special Program in Applied Mathematics and Applied Mechanics

*A novel higher order compact scheme for general second order partial differential equation*

Prof. Swapan Kumar Pandit

2017 - 02 - 22 (Wed.)

15:00 - 17:00

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

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In this work, we propose a novel fourth order accurate compact finite difference scheme for solving general second order partial differential equation on nonorthogonal curvilinear grids. The scheme is fourth order accurate in space and second order accurate in time. It is used to solve some pertinent fluid flow problems on geometries beyond rectangular. It is seen to efficiently produce numerical solutions accurately and compared with established numerical results available in the literature. Excellent comparison is obtained in all the cases.



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