Yang Yang

Assistant Professor, Mathematical Sciences

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My background

Ph.D. in Applied Mathematics, 2009-2013

Assistant Professor at MTU, 2013-present

Areas of research/expertise

Numerical Methods for Differential Equations

- ✓ Ordinary Differential Equations
- ✓ Hyperbolic Equations, Parabolic Equations
- ✓ Others Equations such as KdV Equations

Numerical Cosmology

- ✓ Radiative Transfer Equations

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How I can contribute

➢ Select the best numerical method to solve differential equations (Finite difference, finite element, spectral methods, etc).

➢ Bound-preserving (density function cannot be negative, etc).

➢ Some special problems: The approximations to delta-functions and other type of the unbounded solutions. Estimate the blow-up time, rates and locations.

➢ Some special models: Traffic flow models, Relativistic hydrodynamics, Euler equations, Chemotaxis models, Miscible displacement problems in porous media, Combustion, Radiative transfer equations, (Extended) MHD equations, KdV equations, etc.

➢ Future works: Adaptive methods