

Программа курса LES
1. An introduction to modeling and simulation.
2. Matrix sweep method.
3. High-Order Fractional-Step Methods
4. Time Discretizations. Adams-Bashforth Methods. Adams-Moulton Methods.
5. Furies Method for Three Dimensional Poisson Equations.
6. Three Classical filters for LES.
7. Decomposition of the non-linear term. Leonard's decomposition.
8. Improvement of models in the physical space. Dynamic procedures for computing the constants. Germano-Lilly dynamic procedure.
9. Deterministic statistical models. Localized dynamic model with energy equation.
10. Anisotropic models. Model based on splitting technique.
11. Non-linear models. Dynamic non-linear model.
12. Scale similarity models. Dynamic similarity model.
13. Differential subgrid stress models. Deardorff model. Subgrid viscosity models.
14. Mixed modeling. One parameter mixed dynamic model.
15. Incompressible Navier-Stokes equations with turbulence models.