



Subdepartment **Engineering Fluid Dynamics - CTW**
Department **Mechanical Engineering**

As part of his / her masterassignment

Sunny Titus

will hold a speech entitled:

The implementation of the Arbitrary Lagrangian Eulerian method into a Discontinuous Galerkin Solver

Date: 25-09-2015

Time: 14:00 hr

Room: HT-900

Summary:

The goal of this work is to simulate particle accumulation in a rotating cylindrical separator.

To enable the simulation of flows with particles on a moving domain the Arbitrary Lagrangian Eulerian (ALE) method is implemented for a Discontinuous Galerkin (DG) discretization of the Euler and Navier Stokes equations.

The problem formulation is transformed from the moving domain to a fixed reference domain.

The simulation is advanced in time using a 4th order low storage Runge-Kutta method and the geometric conservation law is enforced to ensure free stream preservation.

Both h- and p-tests have been performed to verify the consistency of the implementation using Stokes 2nd problem as a test case.

Assessment committee:

| | |
|------------------|-------------------|
| K. Venner | (chairman) |
| R. Hagmeijer | (mentor) |
| E. van der Weide | (internal member) |
| H. Geijselaers | (external member) |

chairman,

(Signature)

d.d.

