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14. ABSTRACT  
The Symposium on Overset Composite Grids and Solution Technology is a bi-annual international meeting focused on the use of overset grid technology in numerical solutions. It provides an open communication forum for mathematicians, scientists, and engineers from academia, industry, and government who are working with or interested in using the overset grid approach. The specific goals of the symposium are to: Communicate recent work, new research ideas, and work in progress; Exchange ideas involving overset grid technologies, including unsteady and moving body problems, and emerging hybrid strategies; Provide an opportunity for interaction between researchers, developers, and practitioners. The 8th Overset Symposium was held October 2-5, 2006 at the Gilruth Center of the NASA Johnson Space Center in Houston, TX. A total of 136 people, including 22 students, attended the symposium, which was an increase from the 2004 symposium attendance of 83 people, 17 students. A total of 41 presentations were made covering a wide range of topics. In addition to the normal symposium sessions, this year two short courses

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## **A Summary of the 2006 Overset Symposium on Composite Grids and Solution Technology**

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The Symposium on Overset Composite Grids and Solution Technology is a bi-annual international meeting focused on the use of overset technology in numerical solutions. The technical organization is informal, and only oral presentations are required. Leading edge activities and works in progress are encouraged, which provides an early look at what is to come and facilitates discussions and collaborations at an early stage.

The overset or Chimera grid approach utilizes a set of overlapping grids to discretize the solution domain. Point to point connectivity is not required between component grids in the overlap region and the grids may actually partially lie outside the domain of interest. The primary innovation of the overset method is the accommodation of "holes" within grids, which are those points that are outside the domain of interest and hence are excluded from the computations. The holes and their boundaries within a grid allow the solution from one overlapping grid to be coupled to the solutions on other grids, thus forming a single composite grid and solution. The grid points adjacent to the holes become boundary points termed receptor, fringe, or intergrid boundary points. The marking of holes and the surrounding fringe boundaries form the first phase of an overset grid assembly process. The boundary values required by the flow-field solution at the fringe points are obtained by interpolating the solution from appropriate donor cells using information from other grids that overlap the region. The overset grid methodology provides a flexible computational simulation framework that can be an enabling force in many situations. It has been widely used to simplify the structured grid generation requirements for complex geometries. The use of an overset grid system is also an enabling technology for the simulation of bodies in relative motion, such as a store separation and dispensing submunitions. The overset method has traditionally used structured grids, but recent work has demonstrated the value of using overset unstructured grids.

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- Communicate recent work, new research ideas, and work in progress.
- Exchange ideas involving overset grid technologies, including unsteady and moving body problems, and emerging hybrid strategies.

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- Provide an opportunity for interaction between researchers, developers, and practitioners.

The technical organization is informal, and only oral presentations are required. Leading edge activities and works in progress are encouraged, which provides an early look at what is to come and facilitates discussions and collaborations at an early stage. In addition to technical development activities, presentations on overset applications facilitate interactions between the application and development community. The 8th Overset Symposium was held October 2-5, 2006 at the Gilruth Center of the NASA Johnson Space Center in Houston, TX. A total of 136 people, including 22 students, attended the symposium, which was an increase from the 2004 symposium attendance of 83 people, 17 students. A total of 41 presentations were made covering a wide range of topics. In addition to the normal symposium sessions, this year two short courses were held on Monday, October 2<sup>nd</sup> and proved to be quite successful. The first was an overset class that covered the basic steps of the overset CFD process. The second was a class that covered the latest models and methods available in the OVERFLOW 2 Navier-Stokes CFD code. Both classes were very well received – over 100 people attended one of the two courses.

Table 1 lists the locations for the previous symposiums. Electronic copies of the presentations from the 2002, 2004 and 2006 Symposiums can be downloaded from the following URLs:

<http://www.arl.hpc.mil/events/Overset2002>

<http://www.arl.hpc.mil/events/Overset2004>

<http://www.arl.hpc.mil/events/Overset2006>

**Table 1 - Year and Location of Overset Symposiums**

<b>Year</b>	<b>Location</b>
1992	NASA Ames Research Center
1994	Eglin Air Force Base
1996	Los Alamos National Laboratory
1998	Army Research Laboratory
2000	University of California, Davis
2002	Eglin Air Force Base
2004	Huntington Beach, CA
2006	NASA Johnson Space Center