# An Incremental Engineering Design Process Based on a Flow Simulator

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On the Wednesday, Sept. 10, 1997 Dr. Xuefeng Li, who is professor in the Department of Mathematics and Computer Sciences of Loyola University, gave us talk of “An Incremental Engineering Design Process Based on a Flow Simulator”.

Dr. Xuefeng Li is a researcher in computational fluid dynamics. First, he said, in recent years, a typical engineering design process become interactive. In such a process, the evaluation of the design might be necessary. Most of the existing software tools would perform the evaluation of the design independently from all previous designs.

He said that we discuss the next generation of the software tools that would allow for evaluation based on modeling data and results from the previous version of the design. This allows for a true incremental design process where the feedback is relatively quickly provided to the designer.

He also said, we discuss an incremental engineering design process on the example of the design of transportation vehicles where one of the important evaluation factors is the resistance from the medium, such as air or water. By taking advantage of the fact that modeling results are reused, the system enables engineers to make incremental designs using different levels of body geometry approximations or various accurary specifications. The reuse of modeling results improves the performance of the system by reducing the number of numerical computations needs for engineering designs.