



Node: **CTMH**

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Supervisor: **Sven Kleiven**

Title: **Simulation of a Coach Accident with LS DYNA**

In February 2007, there was a serious frontal collision between two buses with a fatal outcome. Madelen's project simulated a bus accident in order to create a better basis for future designs, and she has now created a computer model which applies the finite-element method to the collision process in detail that can restore and display the crash-sequences based on geometric models. The thesis is the first step in a more complete collision model, and Madelen shows how this could be supplemented with more features, such as allowing the dummy models to be placed on seats so that the data of the simulated damage on the dummy models can be compared with medical images of injured passengers, potentially leading to faster diagnosis.

From PIEp's perspective, Madelen's thesis shows how to combine sophisticated modelling and simulation technology with excellent skills on injury prevention and medical technologies, thus creating a chain of tools to collect and exploit knowledge from accidents. By analyzing the bus accident and thereby acquiring adequate knowledge to put towards the design and construction of the buses of the future, this project has already served to significantly minimize the risk of injury to passengers.

