Verification and Validation Computer simulations are in many engineering applications a cost-efficient way for conductiong design and performance optimalization of physical problems. However, thrusting blindly numbers generated from a computer code can prove to be naive. It doesn't take a lot of coding experience before one realizes the many things that can brake down and produce unwanted or unexpected results. Therefore, credability of computational results are essential, meaning the simulation is worthy of belief or confidence Oberkampf2010. Verification and validation (V&V) is the main approach for assessing and the reliability of computational simulations Sommerville2006. The terminology of (V&V) have proven not to be consistent across differnt engineering disciplines due to the variety of views regarding the fundaments of the method. A thorough review considering the development of (V&V) concepts and terminology during the last century are studied in Oberkampf2010, where several attempts of definitions of verification and validation by different scientific communities are considered. In general, Roache Roache, states verification as "solving the equations right", and validiation as "solving the right equations".

We will in this thesis use the more detailed description found in Roache.

quote The code author defines precisely what continuum partial differential equations and continuum boundary conditions are being solved, and convincingly demonstrates that they are solved correctly, i.e., usually with some order of accuracy, and always consistently, so that as some measure of discretization (e.g. the mesh increments) $\nabla \rightarrow 0$, the code produces a solution to the continuum equations; this is Verification. flushright — Roache, P.J.