

In this bachelor thesis we discuss the effects of compactification and hyperboloidal slicing of spacetime in the numerical solution of wave equation primarily for their application in numerical relativity. The aim was to find the pros and cons of these concepts, to illustrate expected problems using diagrams and to rate the results obtained in specific model problems. A brief explanation and demonstration of relevant numerical methods, hyperbolic Cauchy hypersurfaces, compactification and causal diagrams is a part of the thesis. As a conclusion, the effect of compactification and slicing on the accuracy of differential and integrational schemes was compared as well as the effect of discrete representation on the quality of initial data.