

This thesis describes English-Czech Machine Translation as it is implemented in TectoMT system. The transfer uses deep-syntactic dependency (tectogrammatical) trees and exploits the annotation scheme of Prague Dependency Treebank. The primary goal of the thesis is to improve the translation quality using both rule-based and statistical methods. First, we present a manual annotation of translation errors in 250 sentences and subsequent identification of frequent errors, their types and sources. The main part of the thesis describes the design and implementation of modifications in the three transfer phases: analysis, transfer and synthesis. The most prominent modification is a novel approach to the transfer phase based on Hidden Markov Tree Models (a tree modification of Hidden Markov Models). The improvements are evaluated in terms of BLEU and NIST scores.