TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Computer Science Institute of Theoretical Computer Science, Chair of Automata Theory

Nonmonotonic Reasoning

Winter Semester 2017/18

Exercise Sheet 7 – Autoepistemic logics

20th December 2017

Dr. (habil.) Anni-Yasmin Turhan

Exercise 7.1 Why do the minimality definitions of sets of AE-formulas refer to the minimality of the kernels instead of the minimality of the full sets?

Exercise 7.2 Lemma 4.25 states: A set of AE-formulas E is an expansion of an AE-theory T iff $E = \{\varphi \mid T \cup LE_0 \cup \neg L(For_0 \setminus E_0) \models_{SS} \varphi\}$. Give an intuition why this Lemma holds.

Exercise 7.3 Two AE-formulas φ and ψ are *SS-equivalent* iff $\models_{SS} \varphi \leftrightarrow \psi$.
Show that $L(\neg Lp \rightarrow q)$ and $\neg Lp \rightarrow Lq$ are SS-equivalent.