GL_1 is PSPACE–complete

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This talk is based on the paper [3]. Félix Bou and Joost J. Joosten [1] in 2011. proved that IL_0, the closed fragment of the basic interpretability logic **IL**, is PSPACE–complete. They showed that they can translate GL_1, the closed fragment of Gödel–Löb's provability logic **GL**, into IL_0 in polynomial time. We will focus on proof that GL_1 is PSPACE-hard, which can be found in [3]. More precisely, we will translate **TQBF** into GL_1 in polynomial space. For given closed **QBF**–formula A, GL_1–formula F will be constructed (in polynomial space) so that the following is true: formula A is true if and only if formula F is **GL**-satisfiable. At the end, we will briefly consider the proof that GL_1 is PSPACE–complete which can be found in [2].

References

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