A Uniform Proof for Gödel's Incompleteness Theorems

Cristian S. Calude

University of Auckland, New Zealand, cristian@cs.auckland.ac.nz

J. Hintikka. (*On Gödel*, Wadsworth, 2000, p. 35):

We are now in position to see that any particular proof given to Gödel's first incompleteness theorem is philosophically irrelevant. … it has no philosophical significance whatsoever. It does not, because it cannot, show anything about the reasons why elementary arithmetic is incomplete.

Yu. I. Manin (De Gruyter, 2014, https://www.degruyter.com/document/doi/10.1515/dmvm-1998-0214):

Good Proofs are Proofs that Make us Wiser. … Wisdom lives in connections.

We will present a uniform abstract proof for Gödel first and second, syntactic and semantic, incompleteness theorems based on the undecidability of the Halting problem. In this context, we will discuss Hintikka and Manin statements.