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Sergei N. Artemov* (sartemov@gc.cuny.edu), CUNY Graduate Center, 365 Fifth Avenue,
New York, NY 10016. *Formalizing Brouwer-Heyting-Kolmogorov semantics.*

The logic of proofs LP ([1]) achieves Gödel's objective ([2]) of defining intuitionistic propositional logic IPC via classical proofs and provides a *Brouwer-Heyting-Kolmogorov (BHK)*-style provability semantics for IPC.

The arithmetical provability semantics can be naturally generalized to first-order language and to language with quantifiers over proofs. In both cases, axiomatizability questions have been answered in the negative. However, there have been promising advances towards a system of first-order logic of proofs which can serve as the *BHK* semantics for first-order intuitionistic logic.

References

- [1] Artemov, S. Explicit provability and constructive semantics. *Bulletin of Symbolic Logic*, 7(1), 1–36, 2001.
- [2] Gödel, K. Eine Interpretation des intuitionistischen Aussagenkalküls. *Ergebnisse Math. Kolloq.*, 4, 39–40, 1933.

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