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Katalin Bimbó* (bimbo@ualberta.ca), 2–40 Assiniboia Hall, Department of Philosophy,
University of Alberta, Edmonton, Alberta T6G2E7, Canada. *On the decidability of the
multiplicative–exponential fragment of linear logic.*

Kripke proved the decidability of the implicational fragment of the logic of relevant implication (see [4]). Other relevance logics have been proved decidable relying on the same method of proof. (See, for example, [3, §§3.6–3.9], [2] and [1].) The decidability problem of the multiplicative–exponential (i.e., intensional) fragment of (classical) linear logic remained open for decades. I show that this fragment is decidable. The proof relies on sequent calculi, and combines appropriate versions of three lemmas, which are often referred to as König’s, Kripke’s and Curry’s.

[1] Katalin Bimbó, *Proof Theory: Sequent Calculi and Related Formalisms*, Discrete Mathematics and Its Applications, CRC Press, Boca Raton, FL, 2014.

[2] Katalin Bimbó and J. Michael Dunn, “On the decidability of implicational ticket entailment,” *Journal of Symbolic Logic*, vol. 78 (2013), pp. 214–236.

[3] J. Michael Dunn, “Relevance logic and entailment,” *Handbook of Philosophical Logic*, (D. Gabbay and F. Guenther, eds.), 1st ed., vol. 3, D. Reidel, Dordrecht, 1986, pp. 117–224.

[4] Saul A. Kripke, “The problem of entailment, (abstract),” *Journal of Symbolic Logic*, vol. 24 (1959), pp. 324. (Received September 17, 2014)