

- MOJTABA MOJTAHEDI AND FEDOR PAKHOMOV, *Towards Intuitionistic Polymodal Provability Logic*.

Ghent University.

*E-mail:* [mojtahedy@gmail.com](mailto:mojtahedy@gmail.com).

The polymodal provability logic GLP, studies the provability predicates for extensions of Peano Arithmetic PA by all true  $\Pi_n$ -sentences and their interactions with each other. In this talk, we consider the polymodal provability logic of Heyting Arithmetic HA. With the aid of the characterization of provability logic of HA, we are able to characterize the provability logic of  $\text{HA}^n$ , extension of HA by all true  $\Pi_n$ -sentences.

It turns out that HA and  $\text{HA}^n$  share the same provability logic for every n. Moreover we suggest a polymodal provability logic, called iGLPH, and prove its soundness for arithmetical interpretations in HA. Roughly speaking, iGLPH is just the intuitionistic version of GLP together with  $[n]A \rightarrow [n]B$  for some admissible rules  $A/B$  of  $\text{HA}^n$ , namely those who are verifiable in HA.