

Baaz, Matthias; Ciabattoni, Agata; Fermüller, Christian G.

Herbrand's theorem for prenex Gödel logic and its consequences for theorem proving.

(English) [Zbl 1275.03098](#)

Nieuwenhuis, Robert (ed.) et al., Logic for programming, artificial intelligence, and reasoning. 8th international conference, LPAR 2001, Havana, Cuba, December 3–7, 2001. Proceedings. Berlin: Springer (ISBN 3-540-42957-3/pbk). Lecture Notes in Computer Science 2250. Lecture Notes in Artificial Intelligence, 201-216 (2001).

Summary: Herbrand's theorem for G_{∞}^{Δ} , i.e., Gödel logic enriched by the projection operator Δ , is proved. As a consequence we obtain a "chain normal form" and a translation of prenex G_{∞}^{Δ} into (order) clause logic, referring to the classical theory of dense total orders with endpoints. A chaining calculus provides a basis for efficient theorem proving.

For the entire collection see [\[Zbl 1046.03001\]](#).

MSC:

[03B50](#) Many-valued logic

[03B35](#) Mechanization of proofs and logical operations

[68T15](#) Theorem proving (deduction, resolution, etc.) (MSC2010)

Cited in **13** Documents

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