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PHILMATH SEMINAR

Research seminar in the philosophy of mathematics and the philosophy of logic

Organizers: Fabrice Pataut (SND - UMR 8011 Sciences, Normes, Démocratie, CNRS et Sorbonne Université) and Francesca Poggiolesi (IHPST - (UMR 8590, Institut d'Histoire et de Philosophie des Sciences et des Techniques, CNRS et Université Paris 1 Panthéon- Sorbonne)

Lourdes del Carmen González Huesca donnera une conférence sur le thème *Non-classical Epistemic Axioms for Computer-Aided Verification*.

La conférence aura lieu le lundi 23 janvier 2023 de 17h00 à 19h00 dans la salle de conférences de l'IHPST : 13, rue du Four, 75006 Paris (2ème étage).

Il est également possible d'assister à la conférence et de participer à la discussion qui suivra par Zoom:

<https://pantheonsorbonne.zoom.us/j/92740334998?pwd=K0JIMDlac085Y1dYbnV4N014QVdIU09>

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Résumé :

Non-classical Epistemic Axioms for Computer-Aided Verification

In this talk, we explore a kind of epistemic logic generated by the intuitionistic modal logic S5 (IS5). We investigate the adequacy of the

IS5-axioms maintaining the idea of knowledge as verification but in the light of computer-aided verification processes using the following reading of the box and diamond modalities: Box A means that A is certifiable, that is, some trusted software, like the

Coq proof assistant has awarded a certificate for A and, Diamond A is read as A is verifiable but involves some kind of gap, like a non-trusted software component or the use of some admitted properties (as axioms without verification).

This way, the well established Intuitionistic Epistemic Logic (IEL), due to Artemov and Protopopescu, corresponds only to verified knowledge whereas the intuitionistic modal logic S5 corresponds to both verified knowledge (Box A) and verified belief (Diamond A).

(This is ongoing work with Favio E. Miranda-Perea.)