

- ▶ ALEXANDRE MADEIRA, MANISHA JAIN AND MANUEL MARTINS, *Towards Invariant bisimulations for parametric multi-valued dynamic logics*. CIDMA, University of Aveiro & INESC TEC, University of Minho, Portugal.

Dynamic Logic is a crucial mark on the applied logic to engineering. Despite of its seminal pragmatic role, as the modal logic for the verification of classic programs, its manifest versatility on being adjusted to other computational scenarios (from hybrid systems to quantum computing), still justifies further efforts on its application scope expansion.

In order to handle with scenarios where uncertainty is a prime concern, we presented in [1] a method for the systematic construction of many-valued dynamic logics. The method is parametrised by an action lattice, that defines both the computational paradigm and the truth space (corresponding to the underlying Kleene algebra and residuated lattices, respectively). This parametric principle pushed then other theoretical developments, including the a method to the generation of multi-valued epistemic logic, as reported in [2].

This talk contributes on a parametric models theory for these logics. It is particular focused in the study of generic (parametric) notions of bisimulation adequate to these formalisms. In analogy of the what we have for standard dynamic logic, we explore, for this generic setting, the usual results like the modal invariance and the Hennessy-Milner correspondences.

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[1] ALEXANDRE MADEIRA, RENATO NEVES AND MANUEL MARTINS, *An exercise on the generation of many-valued dynamic logics.*, *Journal of Logic and Algebraic Methods in Programming*, vol. 85 (2016), Issue 5, pp. 1011–1037.

[2] MARIO BENEVIDES, ALEXANDRE MADEIRA, AND MANUEL MARTINS, *A Family of Graded Epistemic Logics.*, *Electronic Notes in Theoretical Computer Science*, vol. 338 (2018), pp. 45–49.