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Constant power maps on Hardy fields and Transseries

We study H-fields (certain ordered differential fields generalizing Hardy fields and Transseries) equipped with “constant power maps”. We show that this class has a model companion, the models of which include the field of LE-transseries and any maximal Hardy field. We study the induced structure on the constant field, prove a relative decidability result, and give some applications to certain systems of differential equations.