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Erin Caulfield* (ecaulfi2@illinois.edu), 1409 W. Green St., Urbana, IL 61801. *Classifying expansions of the real field by complex subgroups.*

We construct two classes of finite rank multiplicative subgroups of the complex numbers such that an expansion of the real field by one such group is model-theoretically well-behaved. As an application we show that a classification of expansions of the real field by cyclic multiplicative subgroups of the complex numbers due to Hieronymi does not even extend to expansions by subgroups with two generators. We also discuss some progress towards a new classification of expansions of the real field by finitely generated multiplicative subgroups of the complex numbers. (Received February 06, 2017)