Riesz Bases of Exponentials on Unbounded Multi-Tiles

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We prove the existence of Riesz bases of exponentials of $L^2(\Omega)$, provided that $\Omega \subset \mathbb{R}^d$ is a measurable set of finite and positive measure, not necessarily bounded, that satisfies a multi-tiling condition and an arithmetic property that we call admissibility. This property is satisfied for any bounded domain, so our results extend the known case of bounded multi-tiles. We also extend known results for submulti-tiles and frames of exponentials to the unbounded case.

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