On finitary functors

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A functor $F : \mathcal{A} \to \mathcal{B}$ between finitely presentable categories is said to be *finitely bounded* if every finitely generated subobject of FX in $\mathcal{B}$ factorizes through the image by F of some finitely generated subobject of X in $\mathcal{A}$.

I will present conditions under which F is finitary (that is, it preserves filtered colimits) if and only if it is finitely bounded. Examples include atomic toposes and semi-simple abelian categories.

This is based on joint work with Jiří Adámek, Stefan Milius and Thorsten Wissmann [1].

Reference

[1] J. Adámek, S. Milius, L. Sousa and T. Wissmann, On finitary functors, *arXiv:1902.05788*.