Sigma limits and applications
Martin Szyld

Sigma limits in 2-categories [1] interpolate between lax and pseudolimits, but unlike them they satisfy: any weighted σ-limit admits an expression as a conical σ-limit. This fact allows to extend two classical results which involve (conical) limits to 2-dimensional category theory as follows:

- A characterization of $\mathcal{C}at$-valued flat pseudofunctors as σ-filtered σ-colimits of representables [1].

- A limit lifting theorem for the 2-category of algebras of a 2-monad [2].

I will explain the basic concepts involved in the statements above, and mention other intended applications of these limits.

References

[1] Descotte M.E., Dubuc E.J., Szyld M., Sigma limits in 2-categories and flat pseudofunctors, Advances in Mathematics 333 (2018).

[2] Szyld M., A general limit lifting theorem for 2-dimensional monad theory, Journal of Pure and Applied Algebra 222 (2018).