On slicely countably determined sets in Banach spaces

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In [1], A. Avilés, V. Kadets, M. Martín, J. Merí and V. Shepelska introduced the concept of slicely countably determined Banach spaces in order to generalize separable Banach spaces which are Asplund or have the Radon–Nikodým property. A bounded convex subset A of Banach space X is called *slicely countably determined* (an SCD set in short), if there exists a determining sequence of slices of A. Moreover, a separable Banach space X is called *slicely countably determined* (an SCD space in short), if every bounded convex subset of X is an SCD set.

We will first survey known results and some open problems around SCD sets and spaces. Then we will introduce and investigate a pointwise version of SCD sets, allowing us to extend this concept to non-separable spaces. Studying SCD points in detail enables us to prove some notable results in the context of separable spaces as well.

This is an ongoing joint work with M. Lõo, M. Martín, and A. Rueda Zoca.

References

[1] A. Avilés, V. Kadets, M. Martín, J. Merí, and V. Shepelska, *Slicely countably determined Banach spaces*, Trans. Am. Math. Soc., 362 (2010), pp. 4871–4900.