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R. Amzi Jeffs* (rajeffs@uw.edu), 6014 35th Ave NE, Seattle, WA 98115. *Understanding Intersection Patterns of Convex Open Sets.*

The classical theorems of Helly, Tverberg, Caratheodory, and their numerous colorful, fractional, and topological variations seek to understand how convex sets can intersect one another in Euclidean space. Importantly, these theorems apply to arbitrary convex sets, which may be open, closed, or neither. I will describe results which are similar in spirit to these classical theorems, but which have the curious feature that they only hold for collections of *open* convex sets. These theorems have applications to the theory of convex neural codes, which I will touch on briefly. (Received January 03, 2019)