

Filter Foundation for Recursive Topology: A Blend of Recursion Theory & Topology

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We present a point-free, filter approach to recursive topology and recursive analysis, and discover new techniques in blending recursion theory and topology.

We see that the class of recursive functions on a recursively presented topological space is expanded into a class containing new objects: the *recursive quantum functions*; we further see that nonrecursive points of the space divide into two subsets: the *avoidable points* and the *shadow points*.

We develop machinery and techniques that are novel and intrinsically germane for this blend. The study reveals new landscapes and offers new directions of research.