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The lattice of uniform topologies

Given a Tychonoff space X (e.g., the reals), there are many ways to topologize $C(X)$, the space of continuous functions from X to $\mathbb{R}$. If we order a specific family of uniform topologies appropriately, we get an atomic complete lattice with many interesting properties, some of which can be used to study the original space X itself. In this talk, we give an introduction to this lattice, discuss some curious properties, open problems and recent discoveries, followed by an invitation to explore this exciting new field.

This is joint work in progress with Dr. Roberto Pichardo Mendoza.