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Polish groupoids and the classification of operator algebraic varieties

I will give an introduction to the classification problem for operator algebraic varieties and their multiplier algebras. I will then present the main ideas of the proof that multiplier algebras of operator algebraic varieties are not classifiable up to isomorphism by countable structures. The proof uses the theory of turbulence for Polish groupoids, which generalizes Hjoth's theory of turbulence for Polish group actions. This is joint work with Michael Hartz.