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## **Shelah's Stability Theory and Topological Properties of Function Spaces**

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We study and characterize stability, NIP and NSOP in terms of topological and measure theoretical properties of classes of functions. We study a measure theoretic property, 'Talagrand's stability', and explain the relationship between this property and NIP in continuous logic. Using a result of Bourgain, Fremlin and Talagrand, we prove the 'almost and Baire 1 definability' of types assuming NIP. We show that a formula  $\phi(x, y)$  has the strict order property if and only if there is a convergent sequence of continuous functions on the space of  $\phi$ -types such that its limit is not sequentially continuous. We deduce from this a theorem of Shelah and point out the correspondence between this theorem and the Eberlein-Šmulian theorem.

**Keywords:** Talagrand's stability, independence property, strict order property, continuous logic, relative weak compactness, angelic space.

**AMS subject classification:** 03C45, 03C90, 46E15, 46A50