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**Alex Iosevich\***, University of Missouri, Department of Mathematics, 201 MSB, Columbia, MO 65211. *Analysis, combinatorics, and arithmetic of incidence theory.*

An incidence theorem is an estimate on the number of pairs (point, geometric object) such that the point lies on the geometric object in question. To put it simply, the goal is to beat the trivial estimate which says that the number of such pairs does not exceed the number of points multiplied by the number of geometric objects. Over the years, incidence theorems have appeared, either directly, or in a slightly disguised form in many different areas of mathematics. In this talk, we shall provide a partial dictionary between incidence theorems in discrete, continuous and number theoretic settings. We shall discuss applications of incidence results in harmonic analysis, combinatorics and additive number theory. (Received April 28, 2006)