M-THEORY FROM THE SUPERPOINT

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Abstract. One mysterious facet of M-theory is how a 10-dimensional string theory can "grow an extra dimension" to become 11-dimensional M-theory. Physically, the process is understood via brane condensation. Mathematically, Fiorenza, Sati, and Schreiber have proposed that brane condensation coincides with extending superspacetime, viewed as a Lie superalgebra, by the cocycle in Lie algebra cohomology which encodes the brane's WZW term. The resulting extension can be regarded as an "extended superspacetime" where still other super p-branes may live, whose condensates yield further extensions, and so on. In this way, all the super p-branes of string theory and M-theory fit into a hierarchy called "the brane bouquet". In this talk, we show how the brane bouquet grows out of the simplest kind of supermanifold, the superpoint.