



## Seminario **MATESCO**

Miércoles 25 de Enero a las 11:00 en el aula 3.

**Título:** 2-LC triangulated manifolds are exponentially many

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**Abstract:**

We introduce "t-LC triangulated manifolds" as those triangulations obtainable from a tree of  $d$ -simplices by recursively identifying two boundary  $(d-1)$ -faces whose intersection has dimension at least  $d-t-1$ . The t-LC notion interpolates between the class of LC manifolds introduced by Durhuus–Jonsson (corresponding to the case  $t=1$ ), and the class of all manifolds (case  $t=d$ ). Benedetti–Ziegler proved that there are at most  $2^{(N/d^2)}$  triangulated 1-LC  $d$ -manifolds with  $N$  facets. Here we show that there are at most  $2^{(N/2d^3)}$  triangulated 2-LC  $d$ -manifolds with  $N$  facets.

We also introduce "t-constructible complexes", interpolating between constructible complexes (the case  $t=1$ ) and all complexes (case  $t=d$ ). We show that all t-constructible pseudomanifolds are t-LC, and that all t-constructible complexes have (homotopical) depth larger than  $d-t$ . This extends the famous result by Hochster that constructible complexes are (homotopy) Cohen–Macaulay.

This is joint work with Bruno Benedetti. Details of the proofs and more can be found in our paper of the same title.