Euler Stratifications of Hypersurface Families

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We stratify families of projective and very affine hypersurfaces according to their topological Euler characteristic. Our new algorithms compute all strata using algebro-geometric techniques. For very affine hypersurfaces, we investigate and exploit the relation to critical point computations. Euler stratifications are relevant in particle physics and algebraic statistics. They fully describe the dependence of the number of master integrals, respectively the maximum likelihood degree, on kinematic or model parameters. Joint work with Maximilian Wiesmann.