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Conormal Spaces and Whitney Stratifications by Martin Helmer

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Abstract. We describe a new algorithm for computing Whitney stratifications of complex projective varieties. The main ingredients are (a) an algebraic criterion, due to Lê and Teissier, which reformulates Whitney regularity in terms of conormal spaces and maps, and (b) a new interpretation of this conormal criterion via ideal saturations, which can be practically implemented on a computer. We show that this algorithm improves upon the existing state of the art by several orders of magnitude, even for relatively small input varieties. This is joint work with Vidit Nanda (Oxford).