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**Andrew D Drucker\*** (adrucker@math.ias.edu). *On the AND- and OR-Conjectures: Limits to Efficient Preprocessing.*

One of the major insights of fixed-parameter tractability theory is that for many *NP*-hard problems, it is possible to efficiently *shrink* instances which have some underlying simplicity. This preprocessing can be a powerful first step toward solving such instances.

At the same time, many other *NP*-hard problems have resisted efficient preprocessing. The “AND-” and “OR-conjectures” of Bodlaender, Downey, Fellows, and Hermelin (JCSS 2009) gave a unified explanation of the hardness of many such problems. Since their work, an important goal has been to provide more standard complexity-theoretic evidence for these conjectures. I will describe recent progress in this area and, time permitting, discuss possible directions for future research.

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