Decomposition of affine crystals in levels 1 and 2

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Affine crystals in type A can be regarded as infinite ranked posets whose rankgenerating functions are classical infinite products (e.g. the Rogers–Ramanujan products appear in rank 1, level 3). I will describe two purely combinatorial decompositions of these crystals, yielding new infinite-sum formulas at levels 1 and 2, where the major index statistic naturally emerges. This is joint work with Jihyeug Jang.