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Title: The alternating normal form for positive braids.

Abstract: We describe a new normal form for elements of the braid monoid B_n^+ . It is reminiscent of the greedy normal form but, instead of considering the maximal divisor of the considered braid that is a divisor of Garside's fundamental braid Δ_n , one takes into account the maximal divisor that lies in B_{n-1}^+ . The resulting normal form turns out to be connected with the braid order in a deep way, improving our understanding of the latter significantly.