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From Poset Games to Partially Ordered Games

Combinatorial games are 2 player games of no chance and perfect information. Under the normal play condition the player to have no move on their turn loses and a game is impartial if for every position both players have the same set of moves. In their paper *Advances in Finding Ideal Play on Poset Games* Clow and Finbow showed that poset games (a class of impartial combinatorial games) under normal play can be reduced to much simpler poset games in such a way that the score of the game (nimber) and optimal moves are preserved. This talk generalizes these results to all normal play games. In doing so both the notions of ordinal sums (whose partial order is a total order of cardinality 2) and disjoint sums of games are generalized. Furthermore the Colon Principle, which deals with ordinal sums of games is generalized.