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We will begin with an introduction to Robin Forman's Discrete Morse Theory (DMT). In particular, we will discuss applying this method to the order complex of a poset as has been done by Babson and Hersh.

Factor order is the partial order on words over a given alphabet which has $u \leq w$ if $w = xuy$ for words x and y , i.e., u is a factor of w . Björner found the homotopy type and thus also the Möbius function for factor order. We show how DMT can be used to rederive this result in such a way as to explain the various concepts he defines to state his formula. This approach also permits us to find an analogue of Björner's theorem in a more general setting. (Received December 22, 2010)