



**How feedback from massive stars shapes the hierarchical star cluster  
assembly in globally collapsing molecular clouds**

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It is well known that most stars form in groups or clusters, which in turn form from Molecular Clouds (MC), but it is still not clear how the structural properties of the clusters are affected by the feedback from their massive stars while they are still connected to their parent MCs. Here we present results from hydrodynamical simulations in which we study stellar cluster formation within a MC undergoing global hierarchical collapse, focusing on the effect of feedback from the photoionizing radiation from massive stars. We show that the feedback from the newly formed stars strongly affects the morphology and dynamics of the gas that continues to fall onto the cluster-forming clump. In particular, we find that the resulting stellar sub-clusters (or "groups") are more extended in simulations that include feedback than the ones obtained in control simulations without feedback, and that infalling motions of the stars forming in the periphery are reduced by this effect. Age gradients in groups can be erased or modified due to the effect of the feedback from massive stars.