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CONSTRUCTION OF COMPLETE EMBEDDED SELF-SIMILAR SURFACES UNDER MEAN CURVATURE FLOW

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We carry out the first main steps towards the construction of new examples of complete embedded self similar surfaces under mean curvature flow. The general strategy is inspired by the work of N. Kapouleas: a surface that is close to being self similar is obtained by taking two known examples of self similar surfaces, a cylinder and plane, and desingularizing the circle at the intersection using an appropriately modified singly periodic Scherk surface. This approximation will then be perturbed to obtain a self-similar surface. We will present some promising results towards the implementation of the above strategy.