Minimal laminations in $\mathbb{R}^3$ and the Hoffman-Meeks conjecture

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Abstract: The Hoffman–Meeks conjecture is one of the basic open problems in classical minimal surface theory, and states that if M is a minimal surface with finite total curvature in ??$\mathbb{R}^3$? with genus g and k ends, then $k \leq g + 2$. This open problem motivates the study of the possible limits of a sequence of embedded minimal surfaces $M_n \subset \mathbb{R}^3$? with fixed genus. Typically, minimal laminations with singularities appear as such limits. By using Colding–Minicozzi theory, we will give a convergence result for (a subsequence of) the M_n if we assume a uniform bound for the injectivity radius of the M_n outside a closed countable set of $\mathbb{R}^3$. We will? also? show how ?one can ?use this convergence result to obtain a (non-explicit) bound $k \leq C(g)$ only depending on the genus, for the Hoffman–Meeks conjecture.?