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Fractional Sobolev isometric immersions

We discuss $\mathbf{C}^1$-regularity and developability of isometric immersions of flat domains into $\mathbb{R}^3$ enjoying a local fractional Sobolev $W^{1+s,2/s}$ regularity for $2/3 \leq s < 1$, generalising known results on Sobolev and Hölder regimes. Ingredients of the proof include analysis of the weak Codazzi equations of isometric immersions and study of $W^{2,2/s}$-planar deformations with symmetric Jacobian derivative and vanishing distributional Jacobian determinant. (Joint with Reza Pakzad and Armin Schikorra.)