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## **Rigidity and regularity** of codimension-one Sobolev isometric immersions

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**Abstract.** We prove the developability and  $C_{loc}^{1,1/2}$  regularity of  $W^{2,2}$  isometric immersions of *n*-dimensional domains into  $\mathbb{R}^{n+1}$ . As a conclusion we show that any such Sobolev isometry can be approximated by smooth isometries in the  $W^{2,2}$  strong norm, provided the domain is  $C^1$  and convex. Both results fail to be true if the Sobolev regularity is weaker than  $W^{2,2}$ .

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