

**Morrey's  $\varepsilon$ -conformality lemma in metric spaces.** Classically, one has the following result. Let  $u$  be a Sobolev map defined on the unit disc  $D \subset \mathbb{R}^2$  and with values in  $\mathbb{R}^n$ . Then

$$\text{Area}(u) \leq E(u),$$

with equality if and only if  $u$  is weakly conformal almost everywhere. Here,  $\text{Area}(\cdot)$  is the integral of the Jacobian determinant and  $E(\cdot)$  the Dirichlet energy of  $u$ . An important question in the theory of minimal surfaces then is: Can any  $u$  be reparametrized to achieve equality in the relation above? Morrey showed that this is almost true: For every  $\varepsilon > 0$ , there exists a quasiconformal homeomorphism  $\varphi: D \rightarrow D$  such that

$$E(u \circ \varphi) \leq \text{Area}(u) + \varepsilon.$$

This result is nowadays called "Morrey's lemma on  $\varepsilon$ -conformal mappings". In this talk, I am going to discuss generalizations of Morrey's lemma for Sobolev maps with metric space targets and with appropriate definitions of an area and energy functional. This is a joint work with Stefan Wenger.