



ON DIVERGENCE OF PRODUCTS OF IRREGULAR SCALAR AND SOLENOIDAL VECTOR FIELDS

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Abstract. We construct an irregular pair satisfying a divergence equation. By using the convex integration method, it can be proved that there exists a pair which violates the chain rule of differentiation. In contrast, such a violation cannot occur when we consider a more regular pair. In the end, we obtain an interpretation of these results from a microscopic point of view. The mechanism of constructing an irregular pair becomes clear by considering a time-independent case.

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