Mathematics > Analysis of PDEs

A chain rule formula in BV and applications to conservation laws

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In this paper we prove a new chain rule formula for the distributional derivative of the composite function $v(x)=B(x,u(x))$, where $u:]a,b[\to\R^d$ has bounded variation, $B(x,\cdot)$ is continuously differentiable and $B(\cdot,u)$ has bounded variation. We propose an application of this formula in order to deal in an intrinsic way with the discontinuous flux appearing in conservation laws in one space variable.

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