Properties of compacton-anticompacton collisions

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— We study the properties of
compacton-anticompacton collision processes. We compare and con-
trast results for the case of compacton-anticompacton solutions of the
K(l,p) Rosenau-Hyman (RH) equation for l=p=2, with compacton-
anticompacton solutions of the L(l,p) Cooper-Shepard-Sodano (CSS)
equation for p=1 and l=3. This study is performed using a Padé dis-
cretization of the RH and CSS equations. We find a significant differ-
ence in the behavior of compacton-anticompacton scattering. For the
CSS equation, the scattering can be interpreted as "annihilation" as the
wake left behind dissolves over time. In the RH equation, the numerical
evidence is that multiple shocks form after the collision, which eventually
lead to "blowup" of the resulting wave form.

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