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Galilean-Invariant XEFT[1] ERIC BRAATEN, Ohio State University —
XEFT is a low-energy effective field theory for charm mesons and pions that can be
used to describe the $X(3872)$ resonance. A Galilean-invariant formulation of XEFT
is introduced to exploit the fact that mass is very nearly conserved in the transition
$D^{*0} \to D^0 \pi^0$. The transitions $D^{*0} \to D^0 \pi^0$ and $D^{*0} \bar{D}^0 \to D^0 \bar{D}^0 \pi^0$ are described
explicitly in XEFT. The effects of the decay $D^{*0} \to D^0 \gamma$ and of short-distance
decay modes of the $X(3872)$, such as $J/\psi\, \pi^+ \pi^-$, can be taken into account by using
complex on-shell renormalization schemes for the D^{*0} and the $D^{*0} \bar{D}^0$ propagators.
Galilean-invariant XEFT should facilitate accurate calculations of the properties of
the $X(3872)$ resonance.

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