Colliding Branes and Formation of Spacetime Singularities AN-
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MOLOGY AND ASTROPARTICLE GROUP TEAM — We construct a class of
analytic solutions with two free parameters to the five-dimensional Einstein field
equations, which represents the collision of two timelike 3-branes. We study the
local and global properties of the spacetime, and find that spacelike singularities
generically develop after the collision, due to the mutual focus of the two branes.
Non-singular spacetime can be constructed only in the case where both of the two
branes violate the energy conditions.

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