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# Prolongation Contraption of Radial Rupture-Network in Innately Ruptured Nascence

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## Abstract

As now the energy is more and more in demand, we need not only find the future energy resources, but also are required to improve the oil and gas recovery for conventional energy. Hydraulic fracturing has been widely used as the main stimulation technique of low permeable reservoirs to improve the hydrocarbon recovery in the petroleum industry. The early theoretical models assumed an uncased, fluid-filled borehole within a homogeneous rock mass and a uniform in situ stress field with the borehole axis aligned with the vertical principal stress. Pressuring this wellbore creates an open planar fracture on opposite sides of the wellbore wall. Each wing then propagates radially along the maximum principal stress direction. However, this model is not representative of hydraulic fracturing in a realistic field setting. In fact, hydraulic fracturing is a multifaceted, complex process. It couples diverse and complex mechanisms, in situ, wellbore, and near-wellbore conditions, etc. For naturally fractured formations, complex near-wellbore fracture geometry is a common occurrence due to the effect of natural fractures.

*Keywords:* Prolongation contraption; Radial rupture; Wellbore