

Continuity of the crack set in dynamic Griffith fracture

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We show that dynamic fracture solutions must have continuity in time of the measure of the crack set. We use the weak formulation and existence result recently developed with G. Dal Maso, which assumes only finite measure of the crack set (in particular, it can be dense, so the weak formulation of the wave equation can not be the usual one). A difficulty is that uniqueness of solutions is so far unclear, so that finite speed of propagation is a bit problematic. However, we show that blow-up methods give an approximate finite speed of propagation, which is enough to prove the result.