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**Oral Presentation**

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**Extensional Branching of the Arg-e-Bam Fault Generated by the 2003 Bam, Iran, Earthquake: Adapting Theory for Fault Branching**

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This study adopts the theory of dynamic fault branching (Poliakov et al. 2002 and Kame et al. 2003) as a means for interpreting the branching of Arg-e-bam fault, which proposed by Nakamura et al. (2005) based on the hypocenter distribution of aftershocks of the M=6.5 December 26, 2003 Bam earthquake (death toll: about 26,000). In that theory the effects of pre-existing stress state, and rupture velocity on dynamic fault branching were shown. We estimate the maximum compression direction with respect to the strike of the Arg-e-Bam fault and check the theory for the Rayleigh-like speed of rupture over the fault (Bouchon et al. 2006). Due to the northward Arg-e-Bam fault rupturing with right-lateral slip (mode II), the eastward branching (extensional side) and its angle with respect to the strike of the main fault in the northern region agrees well with the theory for intermediate inclination of  $S_{max}$  and rupture velocity of  $0.9 c_s$  ( shear wave velocity ) .

**Keywords:** bam earthquake, fault branching

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