

De, S.; Hong, J.-W.; Bathe, K. J.

On the method of finite spheres in applications: towards the use with ADINA and in a surgical simulator. (English) [Zbl 1038.74675](#)
[Comput. Mech.](#) 31, No. 1-2, 27-37 (2003).

Summary: In this paper we report some recent advances regarding applications using the method of finite spheres; a truly meshfree numerical technique developed for the solution of boundary value problems on geometrically complex domains. First, we present the development of a preprocessor for the generation of nodal points on two-dimensional computational domains. Then, the development of a specialized version of the method of finite spheres using point collocation and moving least squares approximation functions and singular weight functions is reported for rapid computations in virtual environments involving multi-sensory (visual and touch) interactions.

MSC:

74S30 Other numerical methods in solid mechanics (MSC2010)
74S05 Finite element methods applied to problems in solid mechanics
74B05 Classical linear elasticity

Cited in 4 Documents

Keywords:

Method of finite spheres; Meshfree method; ADINA; Surgical simulation

Software:

ADINA

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