

## **MODELLING FRICTION IN A PARTICLE TO PARTICLE SPH CONTACT ALGORITHM**

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Previous work developed a particle-to-particle contact algorithm for frictionless sliding between two bodies discretised by SPH particles. A particle to particle formulation removes the requirement to construct surfaces or approximate a surface normal. This algorithm has been successfully applied to the analysis of a range of engineering problems and extended to treat contact between finite element and SPH domains. This paper extends this particle-to-particle contact algorithm to include a friction model to broaden the applicability of the contact algorithm. A simple friction model has implemented that generates a lateral contact force between individual particle pairs, with the friction force vector being orthogonal to the local contact force vector. 2D and 3D sensitivity studies show that the friction model works effectively with the overall contact algorithm and agrees with analytical predictions.