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Development of methodology for component testing under impact loading for space applications PHILLIP CHURCH, QinetiQ, Fort Halstead, Sevenoaks, Kent, NICHOLAS TAYLOR, SMF Group, Cavendish Laboratory, University of Cambridge, MARIE-CLAIRE PERKINSON, ALEX WISHART, Airbus Space and Defence, Stevenage, SANJAY VIJENDRAN, European Space Agency, Noordwijk, Netherlands, CHRIS BRAITHWAITE, SMF Group, Cavendish Laboratory, University of Cambridge — A number of recent studies have highlighted the scientific benefits of penetrator technology in conducting exploration on other planetary bodies and moons within the solar system. Such a "hard landing" approach is cheaper and easier than the traditional "soft landing" method. However it is necessary for the science package of such a mission to withstand the rapid decelerations that will occur upon impact. This paper outlines an approach that has been developed to simulate the loading appropriate to Europa and also to monitor component performance before, during and after the impact.

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