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Impact and microbial life: predicting the effects

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Hypervelocity impact generates large pressures and high temperatures. Recent results have shown that, at certain pressures, microbial life is extinguished. At lower pressures the effects may cause non-lethal effects, but this has not been fully explored. Calculating accurately the impact conditions experienced – whether in the lab or in the field – depends on adequate material data, appropriate calculation methods and, most importantly, avoidance of certain "pitfalls". This presentation describes a range of approaches to estimating the impact conditions, and highlights the strengths and weaknesses of each approach. They are applied to some recent hypervelocity impact tests on sandstone doped with *B. Subtilis*, carried out at the Open University's All Axis Light Gas Gun, to illustrate how the predicted impact conditions (pressures, temperatures) can vary.