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CAV\_KO: A simple 1-D Langrangian hydrocode for MS Excel with automatic generation of x-t diagrams KOSTAS TSEMBELIS<sup>1</sup>, BEN RAMSDEN, WILLIAM PROUD, Cavendish Laboratory, University of Cambridge, JOHN BORG, Marquette University, Wisconsin, USA — Hydrocodes are widely used to predict or simulate highly dynamic and transient events such as blast and impact. Codes such as GRIM, CTH or AUTODYN are well developed and involve complex numerical methods and in many cases a large computing infrastructure. In this paper we present a simple 1-D Langrangian hydrocode developed at the University of Cambridge, called CAV\_KO. The motivation being to produce a code which, while being relatively simple, is useful for both experimental planning and teaching the rudiments of code development. Some studies are presented showing the output for a number of scenarios and comparison with experimental results. The code has been adapted from the original KO code written in Fortran by J. Borg, which, in turn, is based on the algorithm developed by Wilkins. The developed GUI within MS Excel and the automatic generation of x-t diagrams allow CAV\_KO to be a useful tool for quick calculations of plate impact events and for teaching. The code is licensed under the GNU General Public License and can be downloaded from www.shockphysics.com.

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