Numerically simulated model of meteor body fragments distribution after destruction

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To calculate the flow-around of the meteor body fragments system, we have developed a simulation technique based on the grid system. This method helps to consider the bodies of various shapes, sizes and masses and also allows for fairly random relative body position in the flow. It gives an opportunity to implement the algorithm of conjugating aerodynamic and ballistic analyses. The algorithm was tested through the problem of two identical circular cylinders dispersion, the cylinders being located on the right line perpendicular to the approach flow. The obtained values of the bodies dispersion speed properly conform to the theoretical estimates. We provide recommendations for applying the computing technique and describing the dispersion of two circular cylinders of different sizes. The article considers the problem of two bodies' dispersion, the bodies having the shape of cylinder halves. It is shown that due to the hysteresis effect the bodies must execute periodic diverging oscillations.

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