Gravitational Collapse in Self-Similar Spacetimes

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Attempts are made to give an alternative description of self-similar spacetimes which is proving to be very substantial and useful in astrophysics and general relativity. The metric for collapsing dust cloud is utilized in this formalism. The nature of gravitational collapse in self-similar spacetimes has been studied in detail and relevant physical interpretations of the results obtained are given. Some interesting results of the calculation have been visualized.

Key wards: self-similarity, gravitational collapse, collapsing dust, homothetic killing vector.