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Title:	Classical Einstein–Langevin equation and proposed applications
Authors:	Satin, S. (/jspui/browse?type=author&value=Satin%2C+S.)
Keywords:	Metric perturbations Relativistic stars Stochastic gravity
Issue Date:	2018
Publisher:	Springer New York LLC
Citation:	General Relativity and Gravitation, 50(8).
Abstract:	We propose a Classical Einstein–Langevin equation, for certain applications in Astrophysics and Cosmology. The domain of applications and the formulation are quite different than its semiclassical counterpart, which is an active area of research and inspires one to carry out this new formalism. The field of study can be seen to emerge out of well established ideas and results in Stochastic Processes in Newtonian Physics and the Physics in curved spacetime. This is an effort to combine ideas from the two areas to get meaningful and new physical results in astrophysics and cosmology. A brief calculation, to demonstrate the contribution of stochasticity and induced fluctuations to the spacetime metric, for static spherically symmetric relativistic stars by heuristic solution of the Classical Einstein–Langevin equation is given. The applicability of the proposed formalism can have a wider expanse than is mentioned in this article.
URI:	<a href="https://www.scopus.com/record/display.uri?eid=2-s2.0-85049793054&amp;doi=10.1007%2fs10714-018-2418-9&amp;origin=inward&amp;txGid=26199fecc967b87721e806211c102044">https://www.scopus.com/record/display.uri?eid=2-s2.0-85049793054&amp;doi=10.1007%2fs10714-018-2418-9&amp;origin=inward&amp;txGid=26199fecc967b87721e806211c102044</a> ( <a href="https://www.scopus.com/record/display.uri?eid=2-s2.0-85049793054&amp;doi=10.1007%2fs10714-018-2418-9&amp;origin=inward&amp;txGid=26199fecc967b87721e806211c102044">https://www.scopus.com/record/display.uri?eid=2-s2.0-85049793054&amp;doi=10.1007%2fs10714-018-2418-9&amp;origin=inward&amp;txGid=26199fecc967b87721e806211c102044</a> ) <a href="http://hdl.handle.net/123456789/1939">http://hdl.handle.net/123456789/1939</a> ( <a href="http://hdl.handle.net/123456789/1939">http://hdl.handle.net/123456789/1939</a> )
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