Title: Gravitational expansion and collapse of anisotropic cylindrical source with cosmological constant

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Abstract: This work presents an anisotropic cylindrical source's gravitational expansion and collapse with the cosmological constant. For this purpose, we use the cylindrical symmetric metric and energy–momentum tensor to achieve Einstein's field equation component. The mass function is also used to assess the state of the trapped surface. The parametric form of the auxiliary solution is discovered. These presumptions enable us to examine the parameter range at the positive and negative expansion scalar transitions. The generated solution produces expanding and collapsing solutions correspondingly for positive and negative parameter values. A dimensionless measure of anisotropy, pressures and energy density are utilized as physical quantities. The included parameters are shown graphically. The cosmological constant has impacted both the expansion and collapse solutions to phenomena.

Keywords: Graph attention network; Radial basis function neural network; Hybrid model; CHB-MIT EEG dataset; Electroencephalogram signal; Eizure detection; RBFN optimization

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