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New exact stationary cylindrical anisotropic fluid solution of GR

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The properties of interior spacetimes sourced by stationary cylindrical anisotropic fluids are analytically studied for both nonrigid and rigid rotation. The gravito-electromagnetic features of different classes of such GR solutions are described. Their regularity conditions and those for their junction to a vacuum exterior are provided. A new class of rigidly rotating exact solutions to Einstein's field equations satisfying a physically consistent equation of state for anisotropic fluids is displayed. Its physical properties are discussed.

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Session Classification: Exact Solutions (Including Higher Dimensions)

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