

1) Gödel Metric (1949)

$$ds^2 = \frac{1}{2\omega^2} \left(- \left(dt + \exp(\alpha x) dz \right)^2 + dx^2 + dy^2 + \frac{1}{2} \exp(2\alpha x) dz^2 \right) \quad - (1)$$

$$-\infty < t, x, y, z < \infty.$$

- Here ω = angular velocity measured by a non spinning observer in a grain of dust. This is signature free and geodesically complete.

It gives a new interpretation of time.

de Sitter Metric, Static Coordinates

$$ds^2 = - \left(1 - \frac{r^2}{d^2} \right) dt^2 + \left(1 - \frac{r^2}{d^2} \right)^{-1} + r^2 \Omega^2_{n-2}$$

At $r = d$ there is an event horizon.
 There are also other lambda vacuum solutions: anti de Sitter, Schwarzschild de Sitter, Kerr dS, Nariai, and Belotti Robinson.