GEODESIC EQUATION

$$\frac{\mathrm{d}^2 x^a}{\mathrm{d}u^2} + \Gamma^a_{bc}\frac{\mathrm{d}x^b}{\mathrm{d}u}\frac{\mathrm{d}x^c}{\mathrm{d}u} = 0$$

$$\dot{t}_a = \tfrac{1}{2}(\partial_a g_{cd})t^c t^d$$