$$M{:}g \text{ metric } \Rightarrow T\left(M\right) = T^{t}\left(M\right) \Rightarrow T\left(M\right) \text{ symplectic}$$

$$f\left(x{:}v\right) = g_{x}\left(v{:}v\right) \text{ hamilton-func on } T\left(M\right)$$

$$X_{f} \in \text{ hamilton-VF on } T\left(M\right)$$

$$\exp\left(tX_{f}\right) \in \text{ Diff }\left(M\right) \text{ geodesic flow on } T\left(M\right)$$

$$M \text{ geod full } \Leftrightarrow \exp\left(tX_{f}\right) \text{ voll}$$

$$\text{Quant:} \quad \text{harm oscillator}$$