

$$\mathbb{E}_{\{i\} \rightarrow \{i\}} \left[a_i t_i, x_i y_i, \frac{1}{\sqrt{T_i}} + \left(\frac{a_i}{\sqrt{T_i}} + \frac{a_i^2}{\sqrt{T_i}} - \frac{x_i^2 y_i^2}{4 \sqrt{T_i}} \right) \epsilon + O[\epsilon]^2 \right]$$