

$$\mathbb{L} \xleftarrow[\text{ell pos}]{\mathbb{L}} \mathcal{D}_{\mathbb{L}} \sqsubset \mathbb{L} \text{ bosonic}$$

$$\mathbb{L} = \mathbb{L}_{\text{pp}} = \frac{\mathbb{L}^k}{k \in \mathbb{N}} \text{ pure point spectrum}$$

$$\zeta_s^{\mathbb{L}} = \sum_{k>0} \frac{1}{s \mathbb{L}^k}$$

$$\int\limits_{dt}^{0|\infty} t^{s-1} \underbrace{\text{tr}\,\mathfrak{e}^{-\mathbb{L}t} - \dim\ker\mathbb{L}} = \Gamma_s\zeta_s^{\mathbb{L}}$$

$$\text{tr}\,\mathfrak{e}^{-\mathbb{L}t} = \sum_k \mathfrak{e}^{-\mathbb{L}^k t} = \sum_{k>0} \mathfrak{e}^{-\mathbb{L}^k t} + \sum_{\mathbb{L}^0=0} 1 = \sum_{k>0} \mathfrak{e}^{-\mathbb{L}^k t} + \dim\ker\mathbb{L}$$

$$\text{tr}\,\mathfrak{e}^{-\mathbb{L}t} - \dim\ker\mathbb{L} = \sum_{k>0} \mathfrak{e}^{-\mathbb{L}^k t}$$

$$k>0 \Rightarrow 0|\infty \ni t \xrightarrow[\text{trafo}]{{\mathbb{L}}^k t = \tau \in 0|\infty}$$

$$\int\limits_{dt}^{0|\infty} t^{s-1} \mathfrak{e}^{-\mathbb{L}^k t} = \mathbb{L}^{1-s}_k \int\limits_{dt}^{0|\infty} \overbrace{t^{\mathbb{L}^k t}}^{s-1} \mathfrak{e}^{-\mathbb{L}^k t} = \mathbb{L}^{1-s}_k \mathbb{L}^{-1}_k \int\limits_{d\left(\mathbb{L}^k t\right)}^{0|\infty} \overbrace{t^{\mathbb{L}^k t}}^{s-1} \mathfrak{e}^{-\mathbb{L}^k t} = \mathbb{L}^{-s}_k \int\limits_{d\tau}^{0|\infty} \tau^{s-1} \mathfrak{e}^{-\tau} = \frac{\Gamma_s}{s \mathbb{L}^k}$$