

Quantum mechanical problems on the Fuzzy Onion

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September 16, 2025



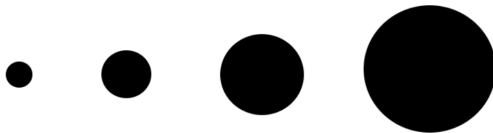
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Bratislava

① Fuzzy Onion

② Quantum mechanical problems

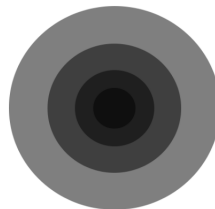
Constructing the Fuzzy Onion

$$(\cdot), \begin{pmatrix} \cdot & \cdot \\ \cdot & \cdot \end{pmatrix}, \begin{pmatrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{pmatrix}, \begin{pmatrix} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{pmatrix}$$



Constructing the Fuzzy Onion

$$\Psi = \left(\begin{array}{c} (.) \\ \left(\begin{array}{cc} \cdot & \cdot \end{array} \right) \\ \left(\begin{array}{ccc} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{array} \right) \\ \left(\begin{array}{cccc} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{array} \right) \end{array} \right)$$



Limits

$$(\lambda \rightarrow \text{const.}) \oplus (M \rightarrow \infty) \oplus (\lambda M \rightarrow \infty) \Rightarrow \mathbb{R}_\lambda^3$$

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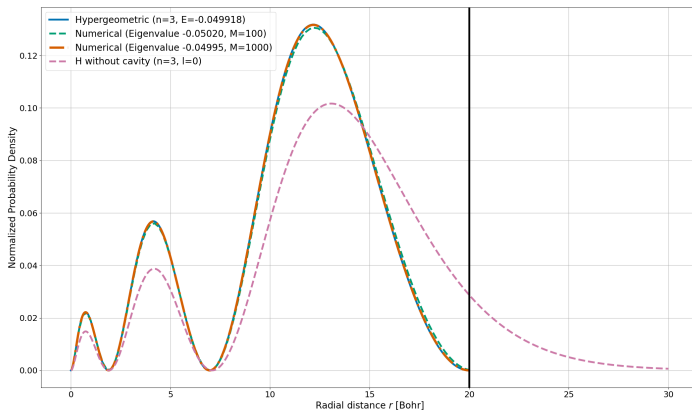
$$(\lambda \rightarrow 0) \oplus (M \rightarrow \infty) \oplus (\lambda M \rightarrow \infty) \Rightarrow \mathbb{R}^3$$

$$(\lambda \rightarrow 0) \oplus (M \rightarrow \infty) \oplus (\lambda M \rightarrow r_0) \Rightarrow \mathbb{R}^3 \text{ in cavity}$$

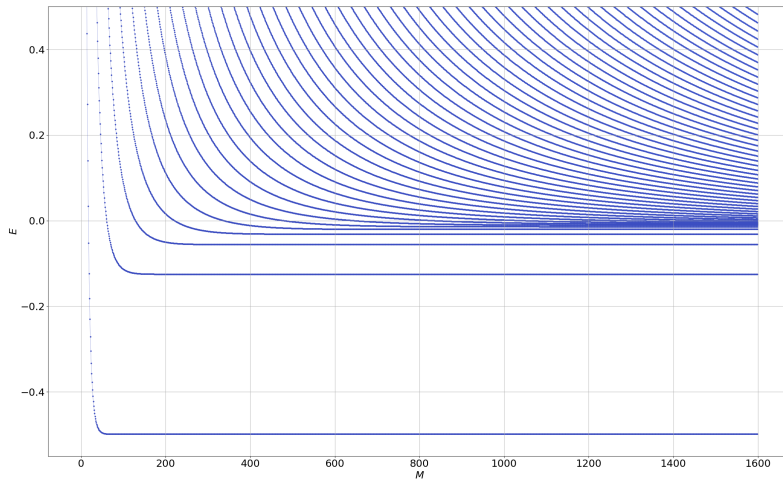
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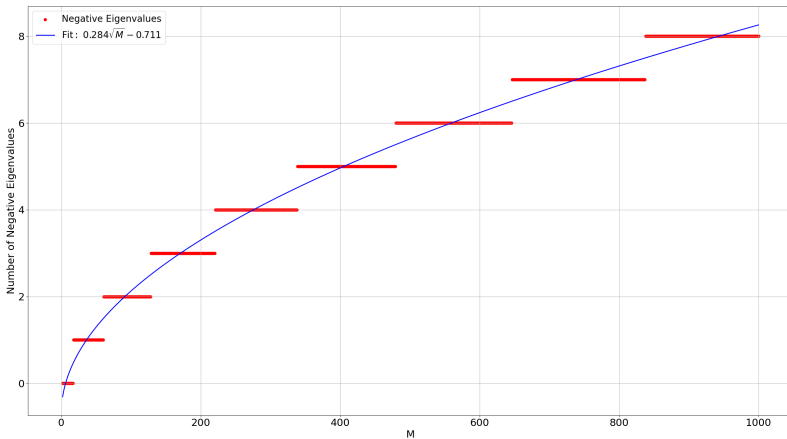
Coulomb problem in Cavity



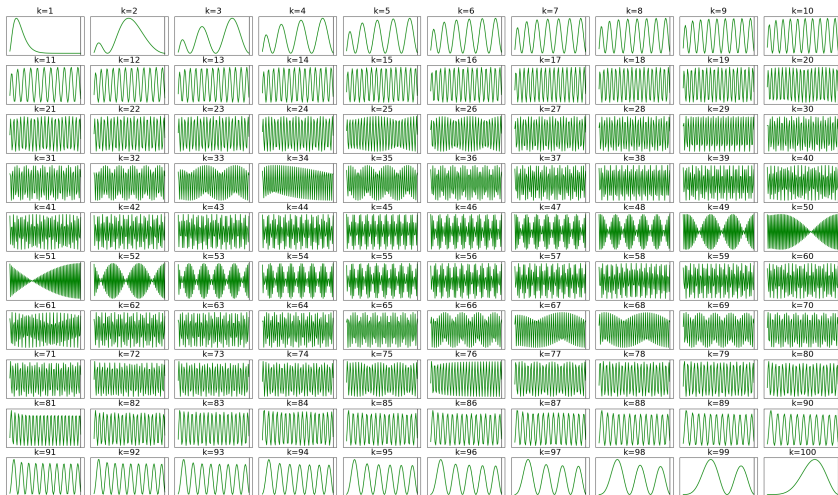
Coulomb problem in Cavity



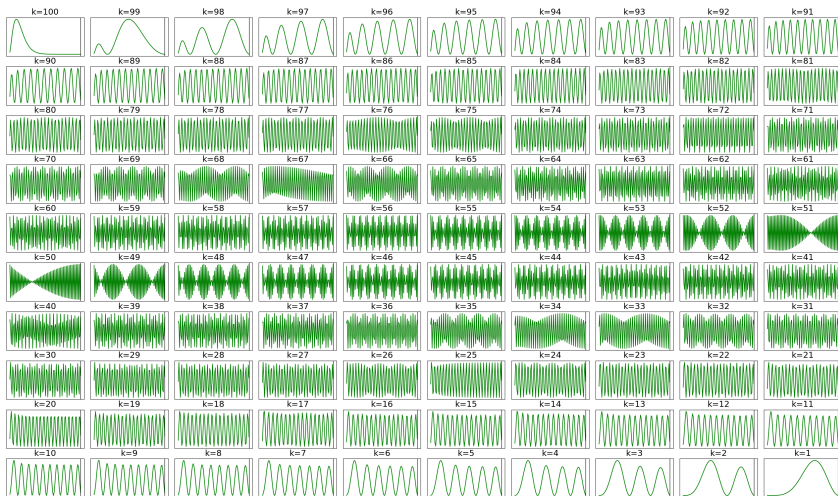
Coulomb problem in Cavity



Mirror states of Hydrogen



Mirror states of Anti-Hydrogen



Thank you for your attention!

