

$$\frac{1}{2} \rho(\mathbf{x}) + \lambda \int_{\Sigma} \frac{\partial G}{\partial n_{\mathbf{x}}}(\mathbf{x}, \mathbf{y}) \rho(\mathbf{y}) d\mathbf{y} = -\lambda \mathbf{n}_{\mathbf{x}} \cdot \nabla_{\mathbf{x}} \left[\frac{1}{4\pi\epsilon_1} \sum_i \frac{q_i}{|\mathbf{x} - \mathbf{x}_i|} \right]$$