Efficient solution of Poisson's equation with free boundary conditions

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I. INTERPOLATING SCALING FUNCTIONS

$\mathbf{r}_{1,2,3} = (\;_1, \;_2, \;_3)$ $\;_{1,2,3}$

$= (\mathbf{r}_{1}j_{2,3}),$

[illegible] 3 [illegible]

1/8 [illegible]

[illegible] H [illegible] 16

[illegible] 17 ([illegible])

[illegible]

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APPENDIX: PROOF OF EQ. (6)

(6).

$\phi( )$ $\rho_{s_1 s_2 s_3}$

$$\rho( ) = \sum_{s_1 s_2 s_3} \rho \, \phi(\;_1)\phi(\;_2)\phi(\;_3). \qquad (1)$$

(1) (2)

$$\sum_{s_1 s_2 s_3} s_1^{1} s_2^{2} s_3^{3} \rho_{s_1 s_2 s_3}$$

$$= \int \mathbf{r} \;^{1} \;^{2} \;^{3} \rho(\mathbf{r}) \quad 0 \leqslant \;_1, \;_2, \;_3 < \;. \qquad (2)$$

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$$= \int \phi( ) \quad = \delta, \quad = 0, \ldots, \quad 1. \qquad (3)$$

$$\int \phi(\;) = \int \phi( )(+) = \int \phi( ) \sum_{=0} \; = $$