

PhD at
 Gran Sasso
 Science Institute

Mathematics in Natural, Social and Life Sciences

Call for PhD

Deadline:
January 13, 2026

PRIMARY FIELDS:

Analysis of PDEs
 Fluid Dynamics
 Numerical Analysis
 Probability and Statistical Mechanics

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$$w = \sqrt{\left(\frac{\hbar k^2}{2m}\right)^2 + \frac{n_0 g}{m} k^2} \quad y_{n+1} = y_n +$$

$$t_{n+1} = t_n + h$$

$$Ric(g) = 0$$

$$= E_h^0 + \sum_{n \geq 1} \frac{(-1)^{n-1}}{(n!)} \int_{\mathbb{R}^{n-1}} dt_1 \dots dt_{n-1} \langle 0 | T V(0)$$

$$V(t_1); \dots; V(t_{n-1}) | 0 \rangle$$

$$\frac{1}{1-v^2} \tanh\left(\sqrt{1-v^2}(x-vt)\right) + iv$$

$$\dot{a}_j(t) = \sum_{k \neq j} d_j d_k \frac{(a_{jk}(t) - a_j(t))}{|a_k(t) - a_j(t)|^2}$$

$$\Psi(t, x) = \phi(x) e^{-i \frac{\hbar}{\hbar} t}$$

$$\sum_{j,k,l} b_j a_{jk} a_{kl} = \sum_{j,k,l} b_j (a_{jk} - y \delta_{jk}) (a_{kl} - y \delta_{kl})$$

$$Q(f, f)(v) = \int_{\mathbb{R}^3} dv_* \int_{S^2} dw B(v - v_*, w)$$

$$\underbrace{\partial_t f + v \cdot \nabla_x f}_{\text{Free transport}} = \underbrace{Q(f, f)}_{\text{binary collisions}},$$

$$f = f(t, x, v)$$

$$\begin{cases} v' = v + ((v_* - v) \cdot w) w, \\ v'_* = v_* - ((v_* - v) \cdot w) w. \end{cases}$$

$$H(\sigma) = - \sum_{i,j} J_{ij} \sigma_i \sigma_j - \mu \sum_j h_j \sigma_j$$

$$D_{KL}(P||Q) = \sum_{i=1}^{\infty} P_i \log\left(\frac{P_i}{Q_i}\right)$$

$$f(v) = \sqrt{\frac{2}{\pi}} \left(\frac{m}{k_B T}\right)^{3/2} v^2 \exp\left(-\frac{mv^2}{2k_B T}\right)$$

$$g = -\left(1 - \frac{2M}{r}\right) dt^2 + \left(1 - \frac{2M}{r}\right)^{-1} dr^2 + r^2 d\Omega^2$$

$$i\hbar \partial_t \psi = \left(-\frac{\hbar^2}{2m} \Delta + V\right) \psi$$

$$M = \sum_{i=1}^r \sigma_i \mathbf{u}_i \mathbf{v}_i^*,$$

$$i\hbar \partial_t \psi = H \psi$$

$$\frac{d}{dt} \left(\frac{\partial \mathcal{L}}{\partial q} \right) - \frac{\partial \mathcal{L}}{\partial \dot{q}} = 0$$

$$S = K \log W$$

$$S = K \log \left(\frac{W}{K} \right)$$

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