Walkin' Robin

Walking on Stars with Robin Boundary Conditions

(SIG Reading Group)

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ARessegetes Stery

1. Random "Walk On Sphere"

Various Boundary Conditions

Definition

Given an (ordinary/partial) differential equation with domain Ω,

- A **Dirichlet boundary condition** fixes the value of solution on the boundary of domain.
- A **Neumann boundary condition** fixes the derivative (normal) applied at the boundary of the domain.
- A **Robin boundary condition** is a weighed combination of the previous two. Explicitly, for given *functions* a, b, g defined on $\partial\Omega$ the associated Robin boundary condition is (for target function f)

$$a\, f + b\, \partial_n f = g \qquad \text{on } \partial\Omega$$

where $\partial_n(\cdot)$ denotes the normal derivative.

2. Improvements in “Walking On Stars”

3. Theoretical Background

Automorphisms

4. Applied Approaches

Sample Frame

Applied stuff.

Thank you!