

Title: PSI 17/18 Front End - Introduction to Mathematical Computing (Schnetter)

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Abstract:

Solving Partial Differential Equations Approximately

PSI Lecture, 2017-08-22

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1. Approximate functions on a manifold
2. Find discrete versions of operators (e.g. derivative operator)
3. Solve a PDE (stationary heat equation)

Discretization

Manifold: Interval $[-1; +1]$

Choose basis

Truncate basis

Represent functions as coefficients for that basis

Basis functions

Keep 4 basis functions:

```
In[1]:= n = 4
```

```
Out[1]= 4
```

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