

# PINNs and PINOs

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## Abstract

PIN y PON

*Keywords:* PINN, PINO, Deep Learning, Neural Networks, Scientific Machine Learning

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## 1. How can we solve PDEs using PINNs and PINOs?

### 1.1. PINNs

#### 1.1.1. Why PINNs?

have been widely used in the recent years to solve different kinds of problems, including , since this kind of neural networks offers several advantages over traditional neural networks, as well as over traditional numerical methods to solve . Some of these advantages are: The incorporation of physical knowledge, which constrains the network by physical laws to ensure the solutions are physically consistent;

## 2. Section 1

Section text. See Subsection 2.1.

1	2	3
4	5	6
7	8	9

Table 1: Table Caption

## 2.1. Example Subsection

Subsection text.

### 2.1.1. Mathematics

This is an example for the symbol  $\alpha$  tagged as inline mathematics.

$$f(x) = (x + a)(x + b) \quad (1)$$

$$f(x) = (x + a)(x + b)$$

$$f(x) = (x + a)(x + b) \quad (2)$$

$$= x^2 + (a + b)x + ab \quad (3)$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned} \quad (4)$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

$$\begin{aligned} f(x) &= (x + a)(x + b) \\ &= x^2 + (a + b)x + ab \end{aligned}$$

## Appendix A. Example Appendix Section

Appendix text.

Example citation, See [1].

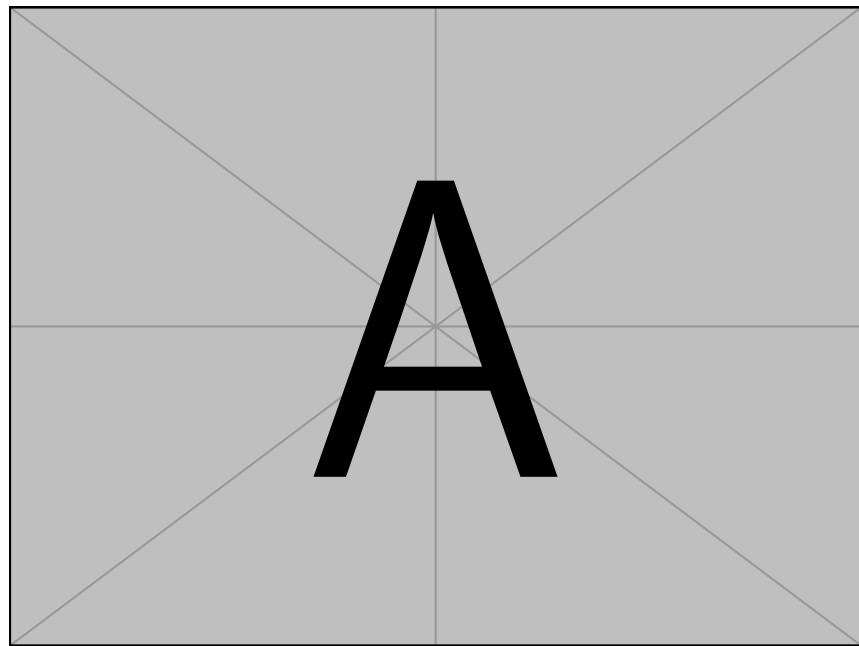


Figure 1: Figure Caption

## References

- [1] Leslie Lamport, *L<sup>A</sup>T<sub>E</sub>X: a document preparation system*, Addison Wesley, Massachusetts, 2nd edition, 1994.