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NN and PDE. PINN and PINO  
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Introductory examples : blowing in the wind. Neural network as a surrogate model of the PDE. Recent work of two teams (Brown, Caltech). Examples of equations studied (fluids flows,...). Principles of construction of the networks. Theoretical results ([1] and [2]).

## Références

- [1] Lanthaler S., Mishra S., Karniadakis G.E., (2021) Error estimates for DeepOnets : A deep learning framework in infinite dimensions arXiv :2102.09618v1 [math.NA] 18 Feb 2021 <https://arxiv.org/pdf/2102.09618.pdf>
- [2] Kovachki N., Li Z., Liu B., Azizzadenesheli K., Bhattacharya K., Stuart A., Anandkumar A. (2021) Neural Operator : Learning Maps Between Function Spaces arXiv :2108.08481 [cs.LG] <https://arxiv.org/pdf/2108.08481.pdf>