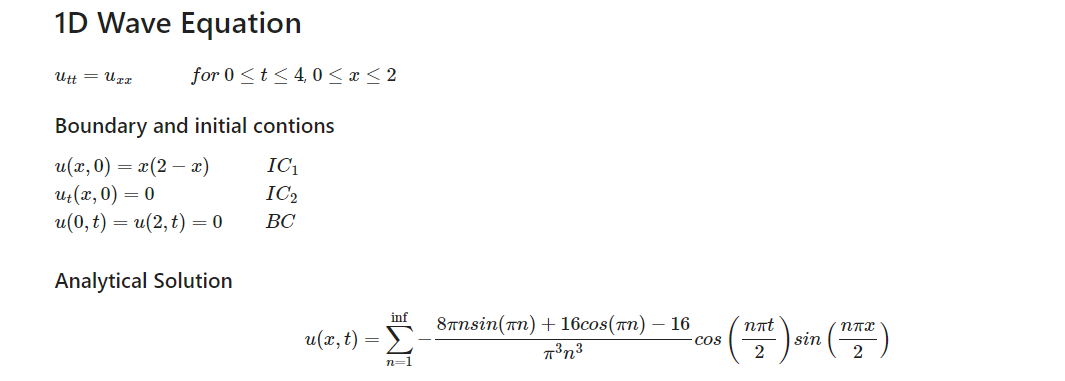
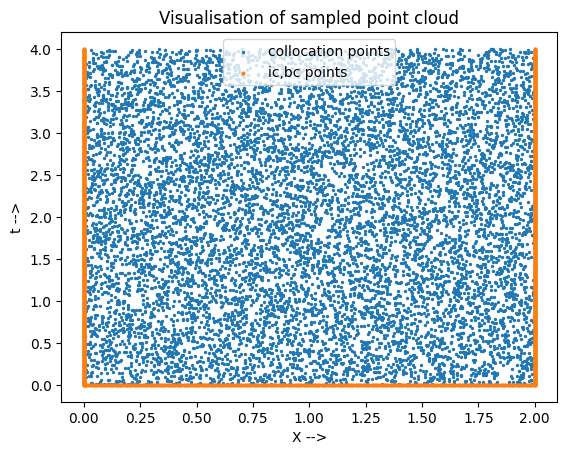
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* ***Domain :***



N\_f (collocation points) = 10000

N\_u(points sampled from BC,IC) = 1000

Points are sampled using Latin hypercube sampling.

* ***Loss Function formulation:***

1. ICBC Loss = +

Where Nb = No. of boundary points , Ni = No. of initial condition points

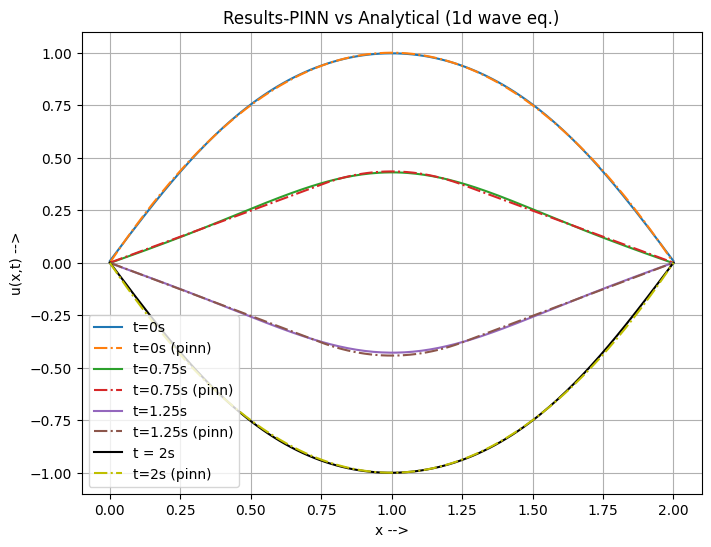
1. PDE Loss =

Where N = N\_f + N\_u

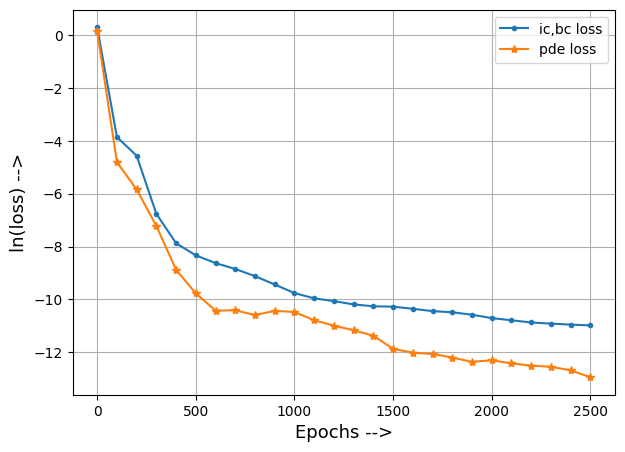
* ***Activation function used:*** tanh()
* ***RESULTS:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Layers** | **Neurons** | **Residual loss** | **Epochs** |
| 4 | 20 | 8.995484e-05 | 2500 |
| 4 | 30 | 3.890816e-05 | 2500 |
| 4 | 40 | 3.214692e-05 | 2500 |
| 4 | 50 | 2.465390e-05 | 2500 |
| 4 | 60 | 1.937172e-05 | 2500 |

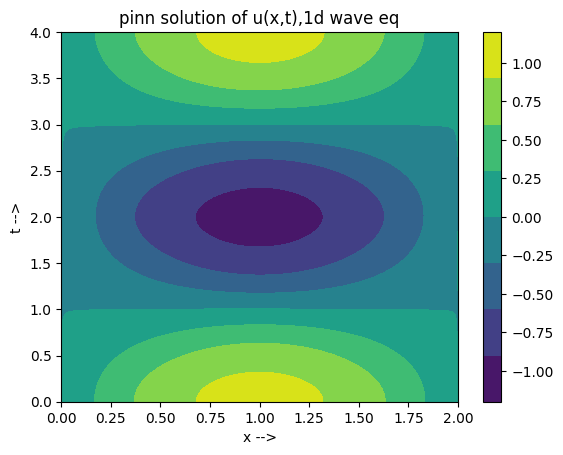
* **Comparison of PINNS results from analytical results at particular Time:**

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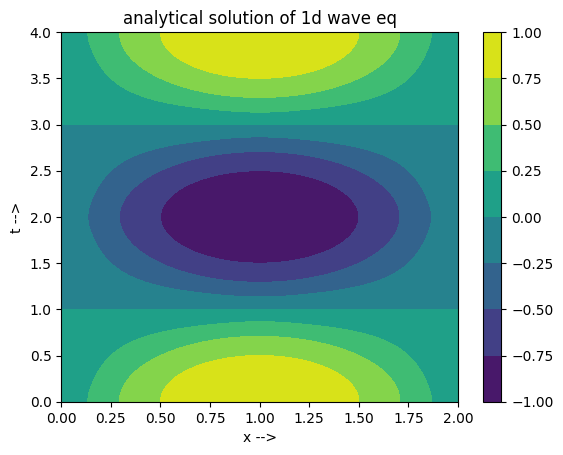
* **Loss convergence**: Loss is plotted in logarithmic scale.

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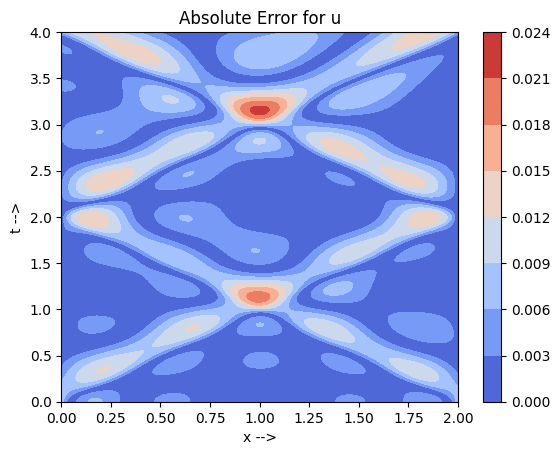
* **Contour plot (PINN solution):**

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* **Contour plot (Analytical solution):**

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* **Error between Analytical solution and PINN solution:**

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