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Neural Networks in Modeling Beam Dynamics using Taylor Mapping

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The paper describes method for modeling beam dynamics based on the calculation of ordinary differential equations with Taylor mapping. This method allows you to get the solutions of the system both in symbolic and numerical form. Using numerical simulation methods, one can obtain partial solutions of beam dynamics process. The paper considers the possibility of solving the inverse problem - finding a general solution based on the obtained private data using machine learning methods. The solution of this problem will allow to predict the dynamics of the beam more accurately, and help to manage the control systems settings .

Summary

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