

Martinez-Luaces, Victor. 2009. *Modelling, applications and inverse modelling: innovations in differential equations courses*. Seventh Southern Right Delta Conference. pp. 159-170.

<https://deltamathconference.org/proceedings/files/2009-Delta-Proceedings.pdf> . Accessed 27 March 2023.

Abstract: Differential equations and Laplace transform are widely used to solve problems concerned with mathematical modelling and applications. These analytical tools appear regularly in chemical engineering courses, due to the usefulness in modelling chemical kinetics, mixing problems and reactors design, among other problems. The discussion in this paper will deal with non-typical inverse problems and how they can be used in engineering courses.

Recommendations will be drawn for undergraduate courses in differential equations for chemical engineering and other related careers.

There is data concerning teaching with models in differential equations and much evidence that using modeling enhances learning.

Keywords: model, application, differential equations, engineering, inverse problem, tank, mixing,