ODEs and PDEs

We turn to ways in which we can classify DEs. The first way we classify DEs is based on whether it includes a single-variable function and its derivatives, or a multivariable functions and its partial derivatives.

Definition:

- An **ordinary differential equation (ODE)** is a DE consisting of derivatives of at least one function of one independent variable.
- A **partial differential equation (PDE)** is a DE consisting of partial derivatives of at least one multivariable function.

Note: In fact, one can view ODEs as a special case of PDEs. In other words, every ODE can be thought of as a PDE, but not the other way around.

This course focuses on ODEs.

Discussion, comments, and examples:

WeBWorK module 01 exercises:

- Problem 5

Relevant Wikipedia articles:

- Ordinary differential equations (https://en.wikipedia.org/wiki/Ordinary_differential_equation)
- Partial differential equations (https://en.wikipedia.org/wiki/Partial_differential_equation)