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linear ordinary differential equation

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The following problem is a *linear ordinary differential equation*:

Let  $A: I \rightarrow \mathbb{C}^{n \times n}$  be a known matrix. Find a matrix  $x: I \rightarrow \mathbb{C}^{n \times n}$  (or vector  $x: I \rightarrow \mathbb{C}^n$ ) such that

$$\begin{aligned}x' &= Ax, \\x(0) &= x_0,\end{aligned}$$

where  $x_0$  is a known initial value.