Notation summary on "Klassinen dynamiikka"

J.-P. Martikainen[1]
[1] *Aalto*
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I. NOTATION THAT MIGHT CAUSE CONFUSION

I will update this when new sources of confusion appear...

- x', y' etc. will in this course typically just indicate coordinates in some other coordinate system. f' might mean spatial coordinate derivative i.e. $f'(x) = df/dx$, but I will do my best to avoid that during this course.
- $\dot{x}$ and $\ddot{x}$ imply 1st and 2nd time-derivative
- Sometimes cartesian coordinates are written as (x, y, z), but sometimes when sums. dot-products etc. are needed it will be easier to denote the same thing with (x_1, x_2, x_3).
- sometimes Einstein summation convention might be used i.e. if there is a repeating index one sums over it for example

$$\nabla^2 = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} = \frac{\partial^2}{\partial x_i \partial x_i} \tag{1}$$

and

$$\nabla \cdot \mathbf{f} = \frac{\partial}{\partial x} f_x + \frac{\partial}{\partial y} f_y + \frac{\partial}{\partial z} f_z = \frac{\partial}{\partial x_i} f_i \tag{2}$$

This convention becomes more powerful especially when we have to deal with tensors/matrices