

# Idiosyncrasies

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## 1 Notation

Landau notation is used in the standard sense for single variables:  $f = O(g)$  if there exists a  $c$  such that  $f(x) \leq cg(x)$  for all  $x$  sufficiently large, with  $x$  perhaps restricted to the support of  $g$  as required by the context. We use the analogous sense for  $\Omega, \Theta, o, \omega$ .

In multiple variables, big- $O$  and friends require  $f(\mathbf{x}) \leq cg(\mathbf{x})$  and similar inequalities, respectively, for all  $\mathbf{x}$  in the support for the current context with  $\|\mathbf{x}\|_\infty$  sufficiently large. To capture the essence of asymptotics, a tilde will crudely absorb behavior up to logarithmic factors:  $f = \tilde{O}(g)$  if  $f = O(g \log^k g)$  for some  $k \in \mathbb{N}$ .

## 2 Abbreviations

- iid: independent and identically distributed
- rv: random variable
- wp: with probability
- wrt: with respect to
- wlog: without loss of generality