Introduction
Modelling parallel systems
Linear Time Properties
Regular Properties
Linear Temporal Logic (LTL)
Computation Tree Logic
    syntax and semantics of CTL
    expressiveness of CTL and LTL   ⟵
    CTL model checking
    fairness, counterexamples/witnesses
    CTL$^+$ and CTL*
Equivalences and Abstraction

The expressive powers of **LTL** and **CTL** are incomparable

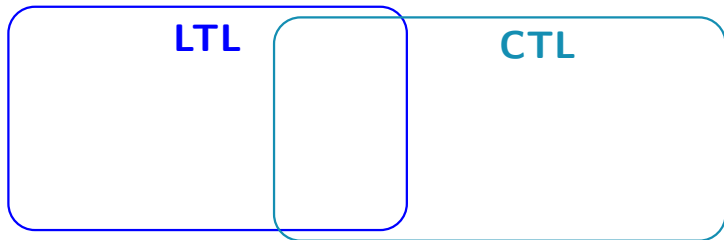The expressive powers of **LTL** and **CTL** are incomparable

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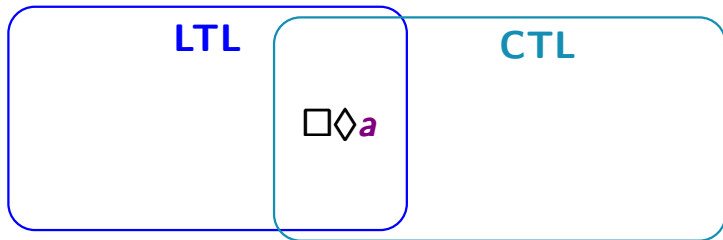- The **LTL** formula $\Diamond\Box a$ has no equivalent CTL formula

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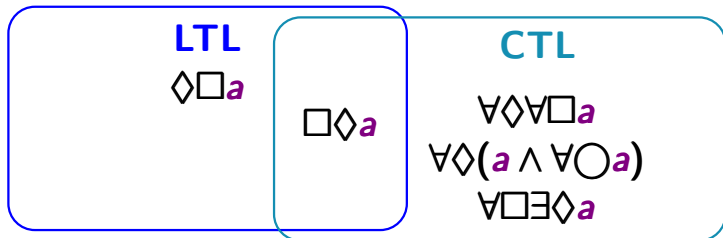
LTL **CTL**

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LTL
$\Diamond\Box a$

$\Box\Diamond a$

CTL
$\forall\Diamond\forall\Box a$
$\forall\Diamond(a \wedge \forall\bigcirc a)$
$\forall\Box\exists\Diamond a$

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model complexity, i.e., for fixed specification:

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If $\Phi \equiv \varphi$ then "often" we have: $|\Phi| = \exp(|\varphi|)$