

Parametric modeling or explicit modeling ?

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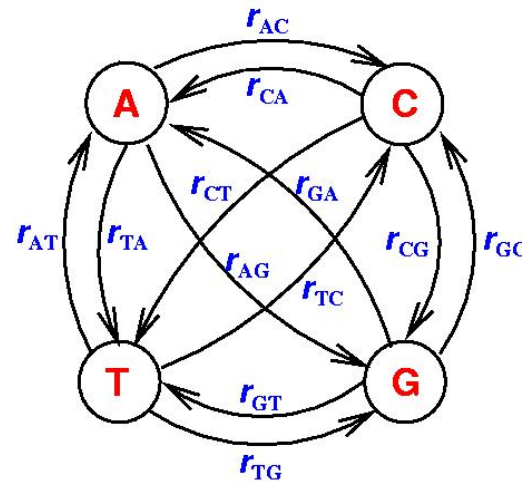
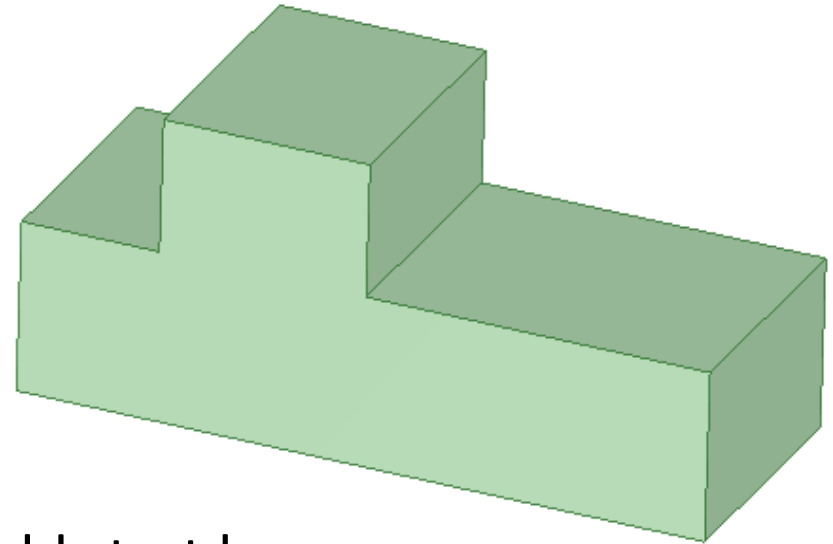


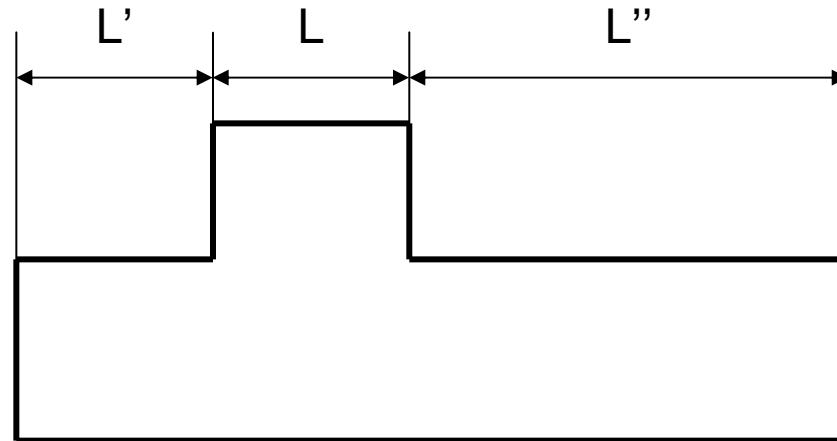
Figure 2.2: Markov model for nucleotide evolution in DNA sequences

Designing with a Parametric CAD tool – 1/3

We want to design the following part



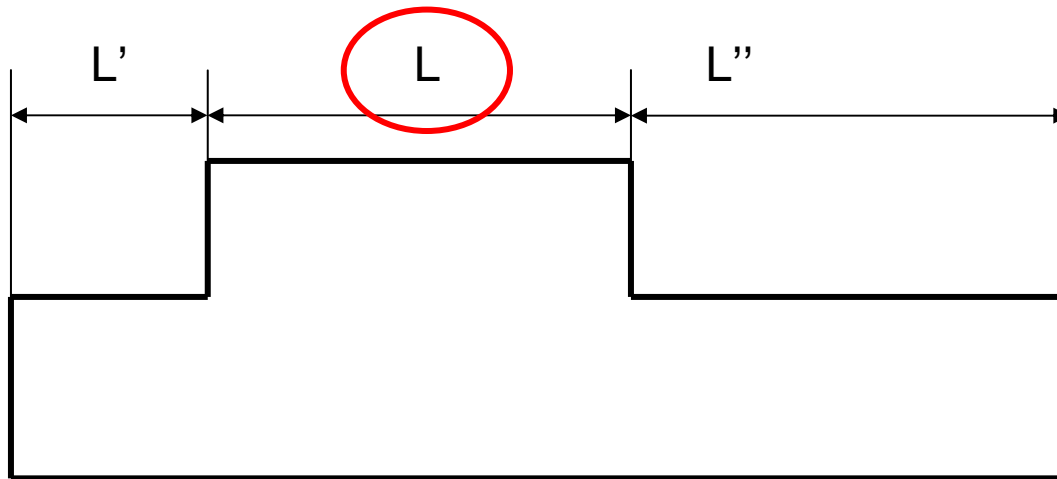
In a parametric CAD tool, we should start by creating a new sketch and defining constraints



Designing with a Parametric CAD tool – 2/3

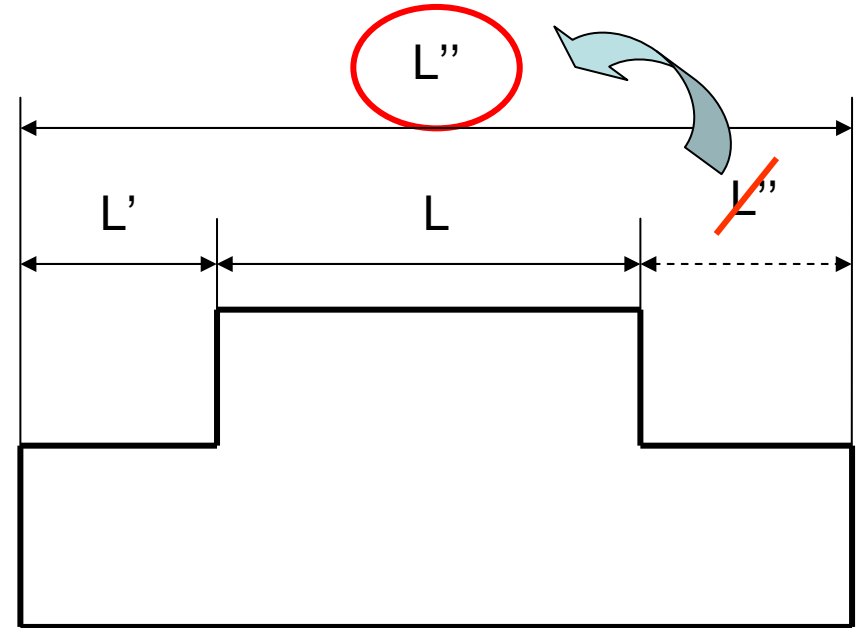
If you want to change the geometry, you have to :

- Find the sketch in the tree of your CAD model (sometime, it takes time ...)
- Find the right constraint in the sketch, if it exists
- Change the value of the constraint



Designing with a Parametric CAD tool – 3/3

But sometimes your design intent is not compatible with the original set of constraints, so you have to delete items and create new ones in your set :



And sometimes your design intent is far away from your original set of constraints, so what can you do ? Restart from scratch or try to modify the existing constraints ?

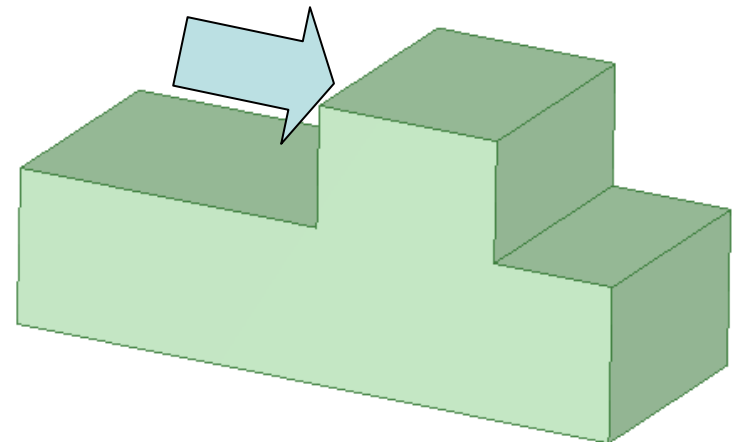
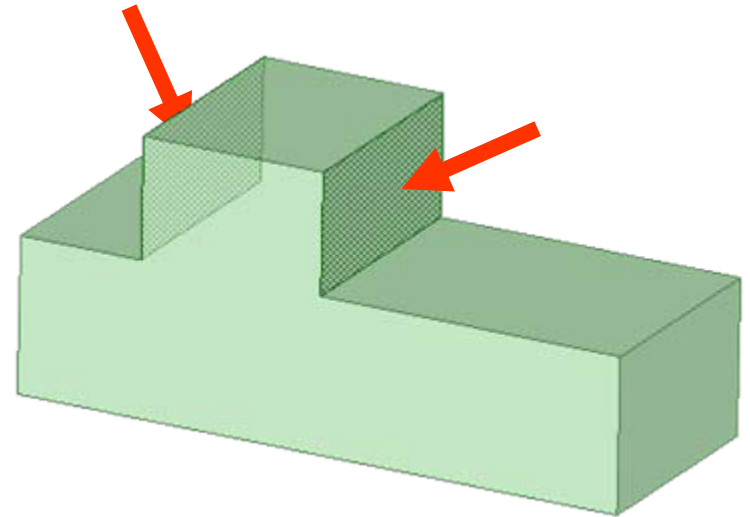


Designing with an explicit CAD tool – 1/3

In an explicit modeling, you can translate in 3D mode all the constraints you want to define

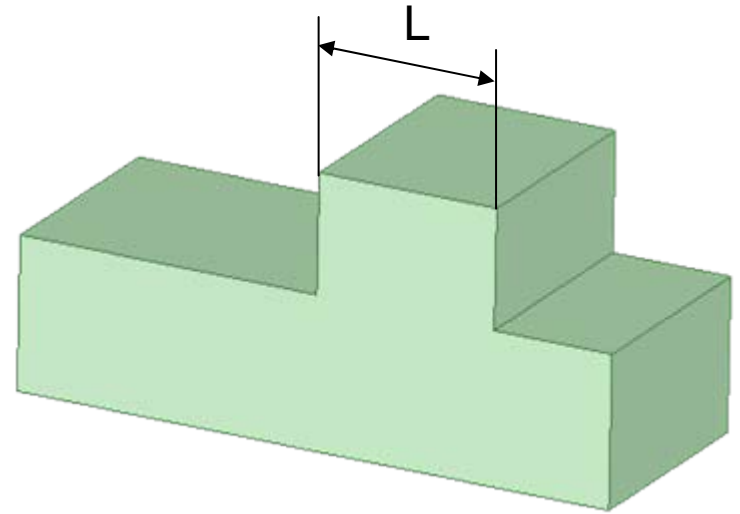
For example, I select two faces I want to move together

Then, I can move the two faces together; the distance between the two faces is constant during the transformation

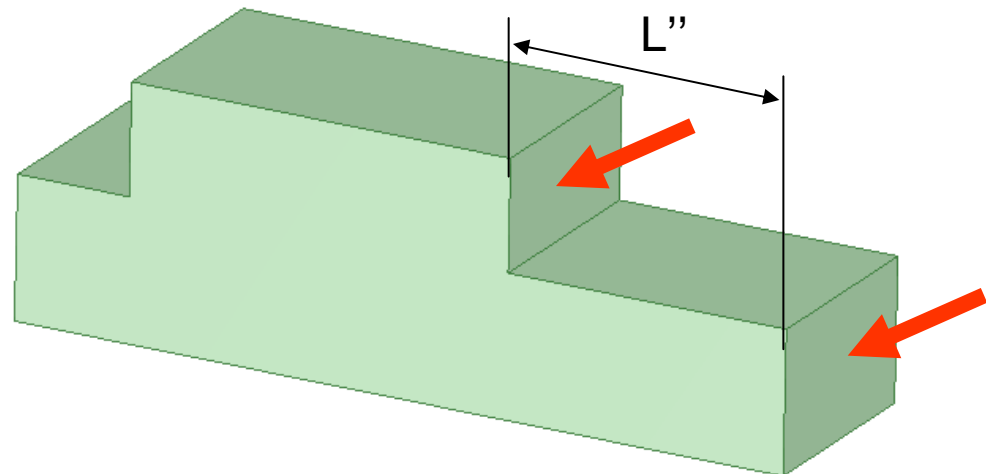


Designing with a explicit CAD tool – 2/3

In fact, we can consider that, during the transformation, we keep the L parameter constant

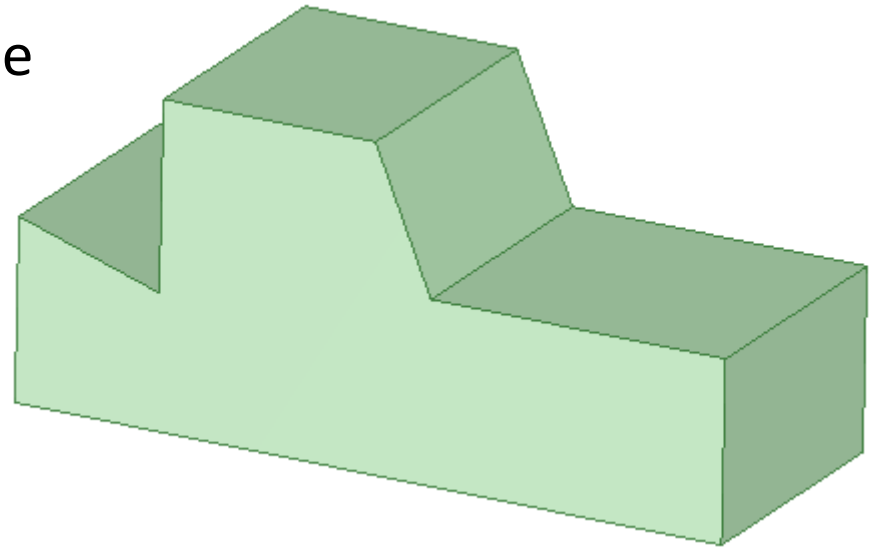


But if we select two other faces, we can use another « explicit » constraint



Designing with a explicit CAD tool – 3/3

In explicit modeling, we can translate any design intent (or almost) at any time, like ...



In explicit modeling, we assume that we aren't able to define some constraints that we'll need one minute later, one hour later or two weeks later ...

And what about the constraints that your colleague needs to do its job ?!