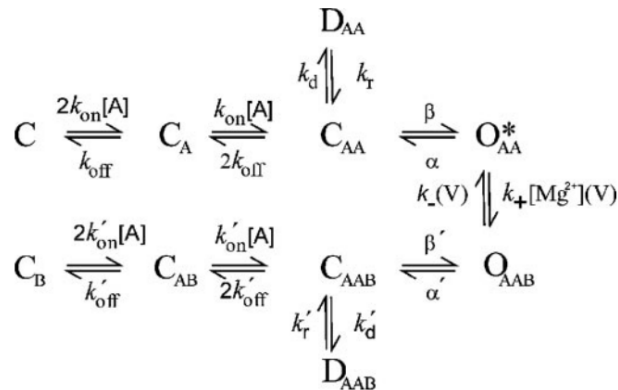


The example in this tutorial is about the NMDA receptor with voltage-dependent regulation of the transition rate. The scheme is from

Vargas-Caballero M, Robinson HP. (2014). Fast and slow voltage-dependent dynamics of magnesium block in the NMDA receptor: the asymmetric trapping block model. J Neurosci. 2004 Jul 7;24(27):6171-80.

The transition scheme is



This above picture is from their original paper.

In this example,  $Mg^{2+}$  binding and release are voltage dependent. We need to define:

```
def R_Mgbind(V): # for magnesium binding
    return 0.61*exp(-V/17)
```

```
def R_Reverse(V): # for the reverse reaction
    return 5.4*exp(V/47)
```

Now, everything is the same as in previous LGIC examples.

Check the source codes in tutorial-NMDAR.py for details.