

Models and Simulation of Ageing Effects in Analogue Circuits

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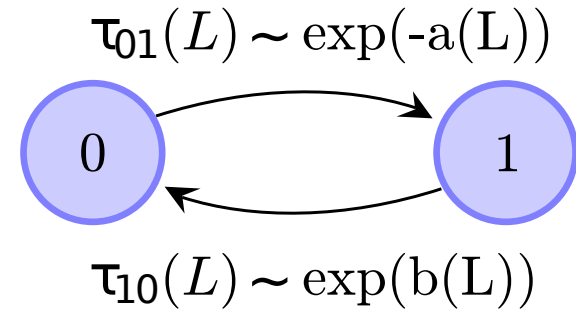
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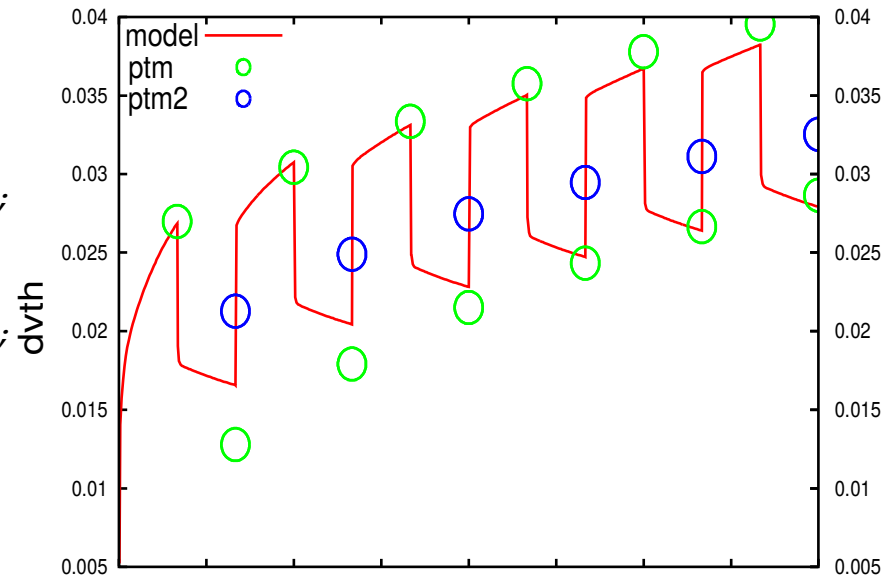
Modelling Ageing Effects

- Versatile Aging Cells
- Model Fitting
- Behavioural Modelling



```

model ageing_mosfet(d, g, s, b);
  electrical d, g, s, b;
  degradational hci, bti0, .. btik;
  [ parameters, variables, functions .. ]
  tt_int hci_integrator(hci);
  rcd_exp #(..) rcd0(bti0), .., #(..) rcdk(btik);
  analog begin
    vth = ..;
    vth *= ( 1 + State(hci)**hci_n
            + State(bti0) + .. + State(btik));
    I(d,s) <+ K * (V(g,s) - vth)**2;
    Level(hci) <+ hci_fct(V(d), V(g), V(s), V(b));
    Level(bti0) <+ V(g, s);
    ..
    Level(btik) <+ V(g, s);
  end
endmodel
  
```



Ageing Effects Simulation

- Single Simulator
- Stress Level Based
- Long Term

