

```

function x = MCsim(pai, n, start)

    nstat=size(pai,1);
    steps=n;
    if nargin < 3
        start=1:nstat;
    end
    nsim=length(start);
    for i=1:nsim
        x(i,1)=start(i); %start status at t1;
        for t=1:steps
            u=rand;
            if(u<pai(x(i,t),1))
                x(i,t+1)=1;
            elseif(u<sum(pai(x(i,t),1:2)))
                x(i,t+1)=2;
            elseif(u<sum(pai(x(i,t),1:3)))
                x(i,t+1)=3;
            else
                x(i,t+1)=4;
            end
        end
    end
end

```