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function hh=Theis_Time_Superposition_FLAQ(Nwell,nt,x,y,delt,T,S)
%nr = number of times to evaluate
%delt = time step
%Q = Volumetric discharge (L^3/T)
%T = K*B = Transmissivity
%t = time to evaluate pressures
%S = Storage Coefficeint (dimensionless)
%h = Drawdown
%welldat= a predefined array (in file 'welldat.dat' of length Nwell with
%      x,y,start time,end time,Q data for each well
welldat=dlmread('welldat.dat');
for i=1:nt
    t(i)=delt*i;
    for m=1:Nwell
        if (welldat(m,3)<=t(i))&&(welldat(m,4)>=t(i))
            %calculate radial distance from point x,y to the well
            r=((x-welldat(m,1))^2+(y-welldat(m,2))^2)^0.5;
            %calculate well function
            u=S*(r)^2/(4*T*(t(i)-welldat(m,3)));
            %calculate drawdown
            hw(m)=(welldat(m,5)/(4*3.14151*T))*expint(u);
        elseif (welldat(m,4)<=t(i))
            %calculate radial distance from point x,y to the well
            r=((x-welldat(m,1))^2+(y-welldat(m,2))^2)^0.5;
            %calculate well function for pumping
            u1=S*(r)^2/(4*T*(t(i)-welldat(m,3)));
            u2=S*(r)^2/(4*T*(t(i)-welldat(m,4)));
            %calculate drawdown
            hw(m)=(welldat(m,5)/(4*3.14151*T))*expint(u1)-(welldat(m,5)/(4*3.
14151*T))*expint(u2);
        else
            hw(m)=0;
        end
    end
    %superimpose drawdowns
    h(i)=sum(hw);
    hh(i,1)=t(i);
    hh(i,2)=h(i);
end
figure;
plot(t,h)
grid on
end

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