11/12/2020 CG

```
%Conjugate gradients
function u = CG(A, b, tol)
n = size(A,1);
% Intial guesss uo
uo = zeros(n,1);
ro = b - A*uo;
po = ro;
for k = 1:10000
    wo = A*po;
    alphao = (ro'*ro)/(po'*wo);
    uk = uo + alphao*po;
    rk = ro - alphao*wo;
    if norm(rk,2)<tol*norm(b,2)</pre>
        break;
    betao = (rk'*rk)/(ro'*ro);
    pk = rk + betao*po;
    uo = uk;
    ro = rk;
    po = pk;
end
fprintf('3d %12.4e\n', k, norm(rk));
u = uk;
end
```

```
Not enough input arguments.

Error in CG (line 5)
```

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n = size(A,1);

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