```
function [r_out,v_out] = Gibbs_method(r_1,r_2,r_3,mu)
%UNTITLED Summary of this function goes here
%   Detailed explanation goes here
r_1_norm = norm(r_1);
r_2_norm = norm(r_2);
r_3_norm = norm(r_3);

C_1_2 = cross(r_1,r_2);
C_2_3 = cross(r_2,r_3);
C_3_1 = cross(r_3,r_1);

u_r = r_2/r_2_norm;
flag_vec = C_2_3/norm(C_2_3);
flag = dot(u_r,flag_vec);
tolerance = 1*(10)^(-16);
if  flag < tolerance
    N = r_1_norm*C_2_3 + r_2_norm*C_3_1 +...
        r_3_norm*C_1_2;

    D = cross(r_1,r_2) + cross(r_2,r_3) + cross(r_3,r_1);

    S = r_1*(r_2_norm - r_3_norm) + r_2*(r_3_norm - r_1_norm) + ...
        r_3*(r_1_norm - r_2_norm);


end
    v_out = sqrt(mu/(norm(D)*norm(N)))*((cross(D,r_2)/r_2_norm)+S);
    r_out = r_2;
end
```

```
Not enough input arguments.

Error in Gibbs_method (line 4)
r_1_norm = norm(r_1);
```

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