

```

function solve_gibbs(
    r1::Vector{Float64},
    r2::Vector{Float64},
    r3::Vector{Float64};
    μ::Float64 = μ_Earth
)
    # cross-products
    c12 = cross(r1, r2)
    c23 = cross(r2, r3)
    c31 = cross(r3, r1)

    # N and D vectors
    N = c12*norm(r3) + c23*norm(r1) + c31*norm(r2)
    D = c12 + c23 + c31

    # S vector
    S = r1*(norm(r2)-norm(r3)) +
        r2*(norm(r3)-norm(r1)) +
        r3*(norm(r1)-norm(r2))

    # scalar prefactor
    factor = sqrt( μ / (norm(N)*norm(D)) )

    # Gibbs velocity at r2
    v2 = factor * ( cross(D, r2)/norm(r2) + S )

    return v2
end

export solve_gibbs

```