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% machFromAreaRatio
% Inputs:
% H: Area Ratio, A / A_star
% gamma: Ratio of Specific Heats
% isSonic: 1 -> Supersonic Solution, 0 -> Subsonic Solution

function Ma = machFromAreaRatio(H, gamma, isSonic)

maxErr = 1e-6;

if (isSonic == 1)
    Ma_guess = 2;
else
    Ma_guess = 0.0001;
end

err = maxErr + 1;
while (err > maxErr)
    Ma_next = Ma_guess - (f(Ma_guess) / fprime(Ma_guess));
    err = abs(Ma_next - Ma_guess);
    Ma_guess = Ma_next;
end

Ma = Ma_guess;

function val = f(Ma)
    val = H - (1 / Ma) * ((2 + (gamma - 1) * (Ma^2)) / (gamma + 1))^((gamma + 1) / (2 * (gamma - 1)));
end

function val = fprime(Ma)
    val = (1 / Ma^2) * ((2 + (gamma - 1) * (Ma^2)) / (gamma + 1))^((gamma + 1) / (2 * (gamma - 1)));
    val = val - ((2 + (gamma - 1) * (Ma^2)) / (gamma + 1))^(((gamma + 1) / (2 * (gamma - 1))) - 1);
end

end

Not enough input arguments.

Error in machFromAreaRatio (line 11)
if (isSonic == 1)

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