

```
function [T,P,rho] = stdatm(h)
% STDATM Atmospheric properties based on ISA
% Inputs are:
%   h       :a numeric array of Mx1 geopotential altitude in m
%
% Outputs are:
%   T       :a numeric array of Mx1 air temperature in K
%   P       :a numeric array of Mx1 air pressure in Pa
%   rho     :a numeric array of Mx1 air density in kg/m^3

arguments
    h(:,1) {mustBeNumeric, mustBeReal}
end

[T,P,rho] = deal(zeros(length(h),1));
for i = 1:length(h)
    if h(i) <= 11000
        T(i) = 288.16 + (-6.5e-3).*h(i);
        P(i) = 101.32e3.*(T(i)./288.16).^((-9.81)./((-6.5e-3).*287));
        rho(i) = 1.225.*(T(i)./288.16).^(-1-((9.81)./((-6.5e-3).*287)));
    elseif h(i) <=25000
        T(i) = 216.66;
        P(i) = 22.346.*exp((-9.81.*(h(i)-11000))./(287.*T(i)));
        rho(i) = 0.3642.*exp((-9.81.*(h(i)-11000))./(287.*T(i)));
    end
end
end
```