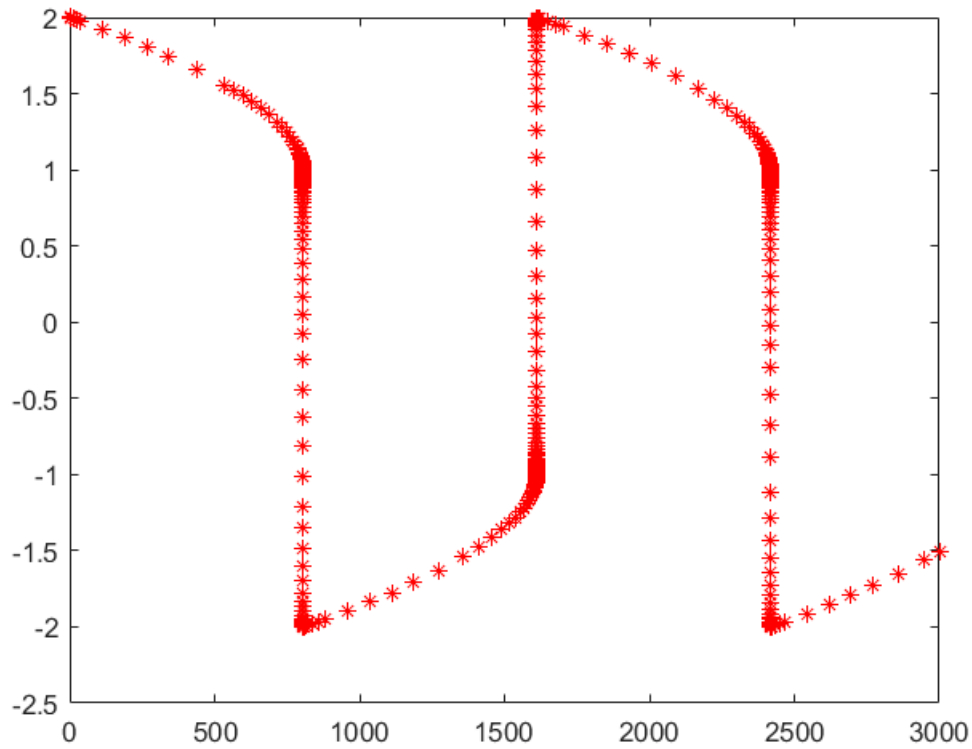


## 刚性问题

```
tspan = [0, 3000];  
y0 = [2 0];  
% [x, y] = ode45(@df1, tspan, y0); % 非常慢, 考虑为刚性问题  
[x, y] = ode15s(@df1, tspan, y0); % 很快  
plot(x, y(:,1), "r*"); % 作图也可以进一步证明为刚性
```



## 函数定义

```
function dy = df1(~, y)  
    dy = zeros(2, 1);  
    dy(1) = y(2);  
    dy(2) = 1000*(1-y(1)^2)*y(2)-y(1);  
end
```