

Úloha: Obíhání planet

vstup:

výstup: animace pohybu Měsíce okolo Země

Programové řešení:

```
function moon

% generovani Zeme
% figure('color','k');
figure;
hold on;
topo_e = imread('earthmap1k.jpg');
[x y z] = sphere(50);
surface(x,y,-z,'facecolor','texturemap','cdata',topo_e,'linestyle','none');

% generovani Mesice
[x y z] = sphere(50);
x = 0.3*x;
y = 0.3*y;
z = 0.3*z;
Xsm = [5,0,0];
Vm = [0,0.1,0.2];
topo_m = imread('moonmap1k.bmp');
tisk_m =
surface(x+Xsm(1),y+Xsm(2),z+Xsm(3),'facecolor','texturemap','cdata',topo_m,'l
inestyle','none');
k = 0.5;

axis equal;
axis([-5 5 -5 5 -5 5]);
grid on;
view(3);

dt = 0.2;
while 1==1
    Vm = Vm - dt*k*Xsm/norm(Xsm)^3;
    Xsm = Xsm + dt*Vm;

    % tisk
    set(tisk_m,'Xdata',x+Xsm(1),'Ydata',y+Xsm(2),'Zdata',z+Xsm(3));
    pause(0.001);
    drawnow;
end
```

