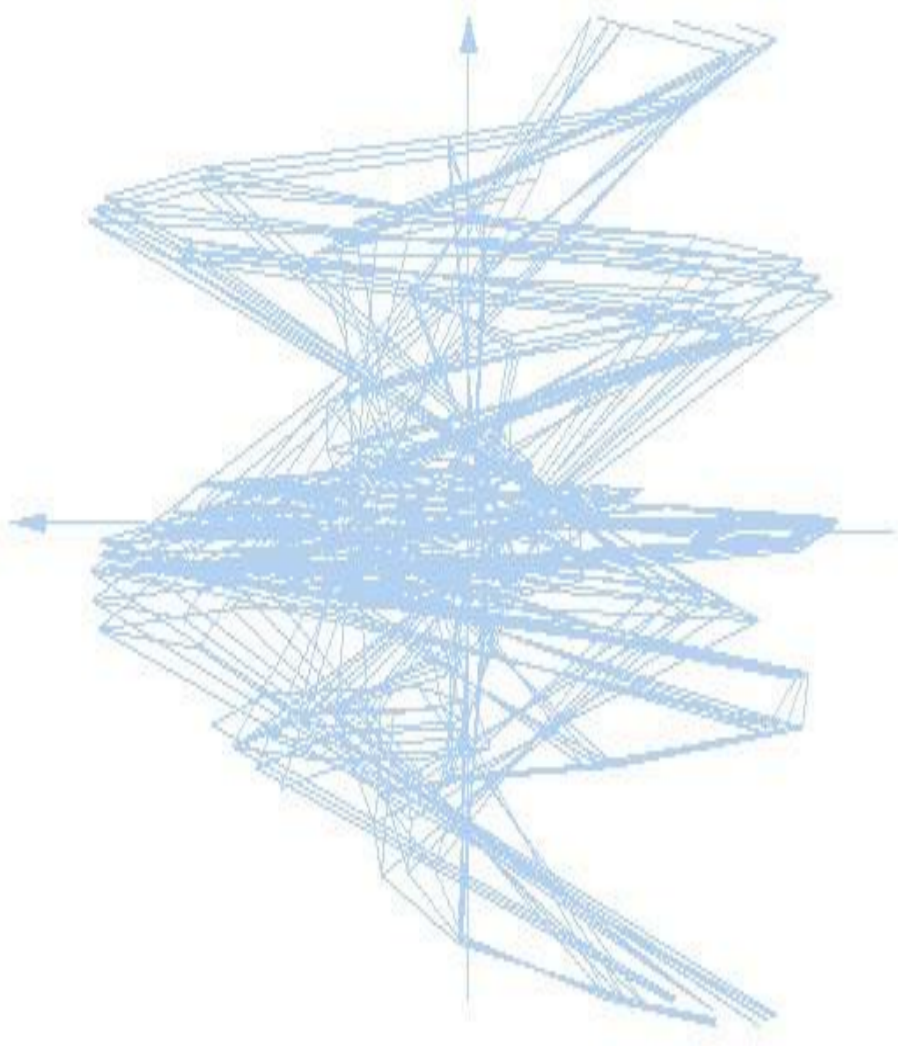


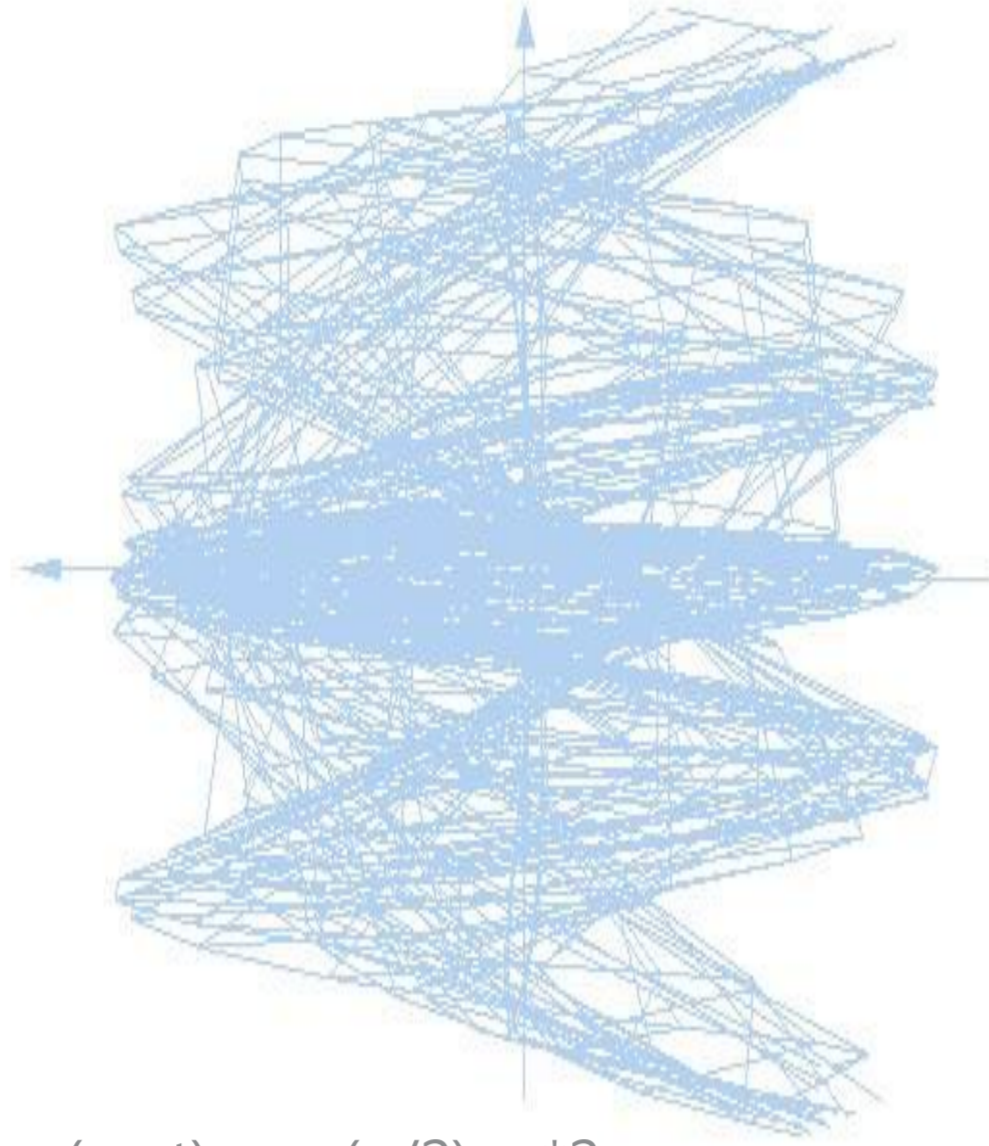
MATEMATIKA U ARHITEKTURI 2

Arhitektonski fakultet Univerziteta u Beogradu; Prof. dr Ljiljana Petruševski; Student Vesna Mihajlovic, 2013/191

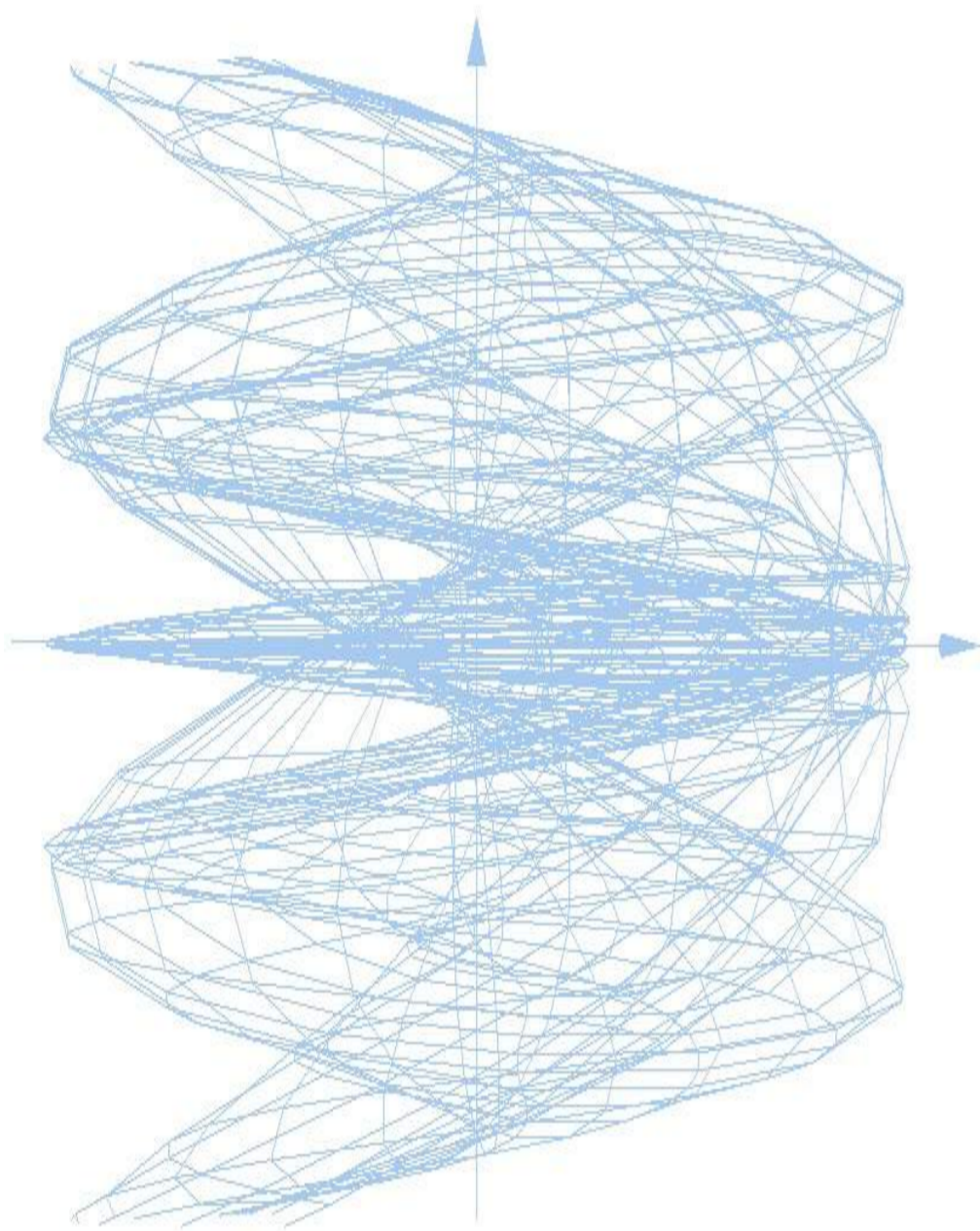
POVRSI U PROSTORU 3D grapher



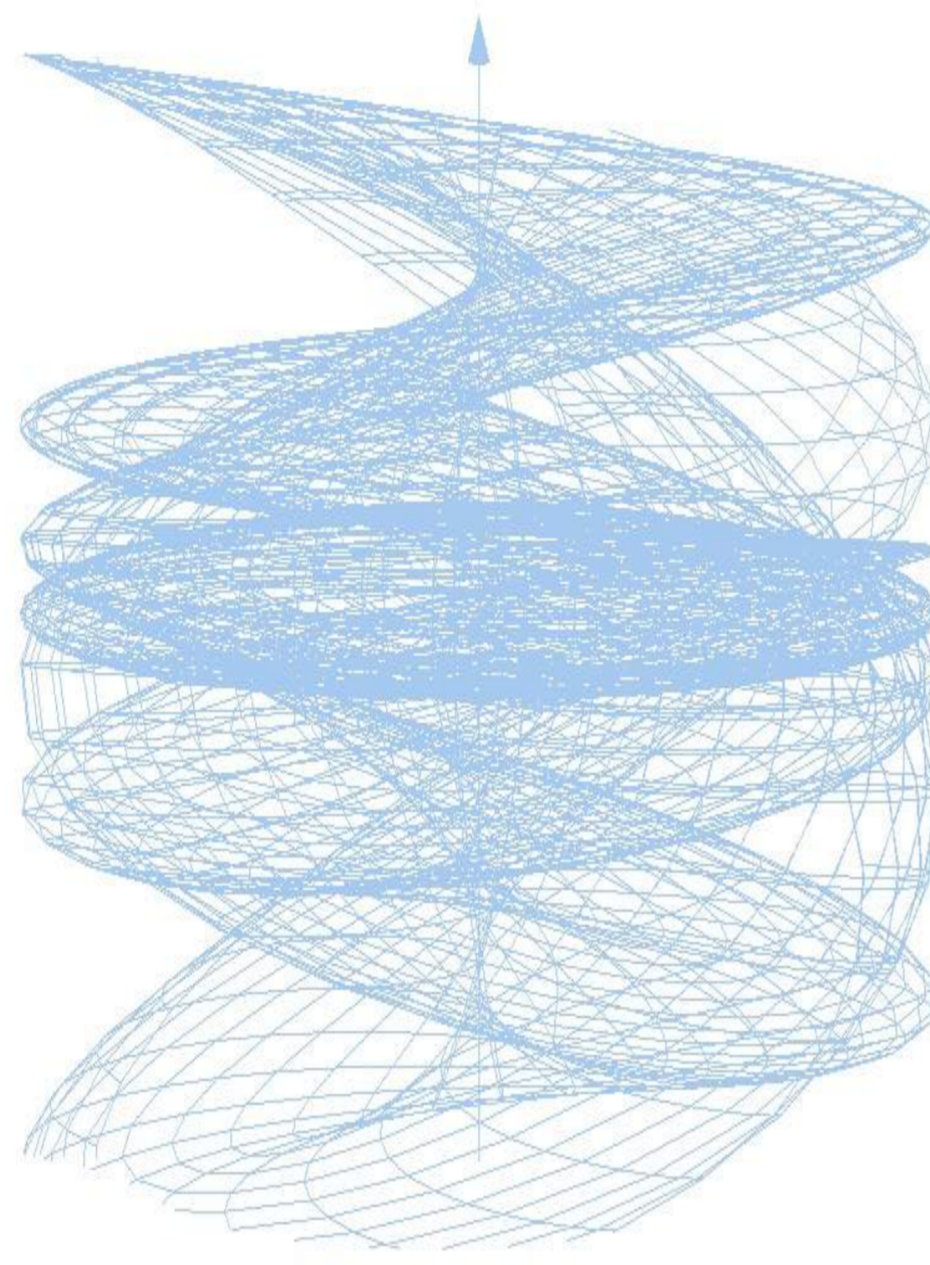
$$\begin{aligned} a(u,v,t) &= \cos(u/2) + v^2 \\ R(u,v,t) &= 9 \cdot \cos(u) + 2 \\ z(u,v,t) &= 0.6 \cdot u \cdot \cos(v) \cdot 1.9 \\ \min u &= 1 \quad \max u = -10 \quad \text{steps} = 15 \\ \min v &= 1 \quad \max v = 20 \quad \text{steps} = 15 \end{aligned}$$



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Povrs je dvoparametarski skup tacaka u prostoru, tj. skup tacaka prostora cije su koordinate funkcije dva parametra u i v.

Ako su u i v krivolinijske koordinate na povrsi, onda se povrs moze odrediti jednačinama:

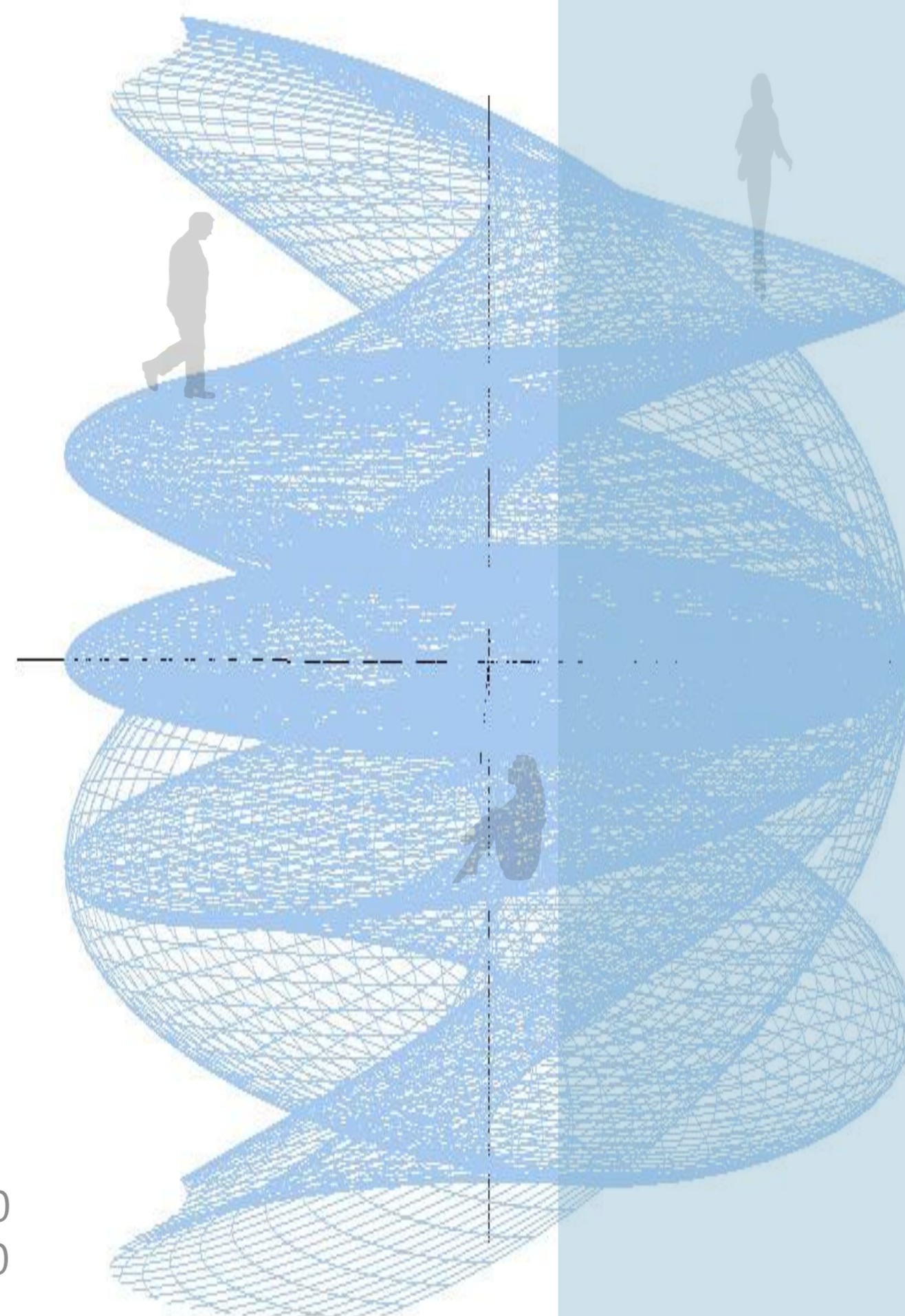
$$a(u,v,t); R(u,v,t); z(u,v,t)$$

Promenom određenih parametara funkcije menja se i povrs (matematičko prikazivanje kroz zadate primere), odnosno kroz primere je menjan parametar STEPES (15-25-40-70-150).

Povećanjem tog parametra dobija se sve "gusca" forma.

Zadatak je radjen u programu 3D grapher.

Kao krajnji proizvod analize dobijena je arhitektonična forma, sa potencijalom da postane deo urbanog konteksta.



Koncan proizvod

$$\begin{aligned} a(u,v,t) &= \cos(u/2) + v^2 \\ R(u,v,t) &= 9 \cdot \cos(u) + 2 \\ z(u,v,t) &= 0.6 \cdot u \cdot \cos(v) \cdot 1.9 \\ \min u &= 1 \quad \max u = -10 \quad \text{steps} = 150 \\ \min v &= 1 \quad \max v = 20 \quad \text{steps} = 150 \end{aligned}$$