

# Vizualizace Parkovy Transformace 05

## Purpose

Jednoduchá demonstrace Parkovy transformace

## Description

Snaha o grafickou a vektorovou demonstraci tokových veli in ve statoru a rotoru synchronního stroje.

## System

## Sites of Interaction

## System Parameters

$$I_f = 1$$

$$L_{aFm} = 0.9$$

$$L_{a0} = 0.9$$

$$L_2 = 0.3$$

$$L_{ab0} = 0.9$$

$$L_{ff} = 2$$

$$K_d = 0.8165$$

$$K_q = 0.8165$$

$$K_0 = 0.5774$$

## System excitation

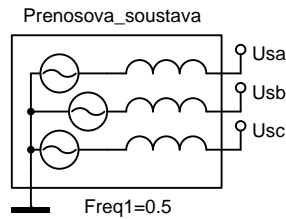
## Task

## Assumptions

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## Solution

### Model



### Data

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*: Vizualizace Parkovy Transformace 05
*SYSTEM;
Prenosova_soustava > @PowerSource3f2 Usa,Usb,Usc,
  0 / Freq1=0.5;

Zatizeni /TAB/ 0,0, 3,0, 6,0.6, 10,0.6;

ZatUhel=Zatizeni(Time);
Theta=1Pi*Time+ZatUhel;

Ia=Usa/1e5;Ib=Usb/1e5;Ic=Usc/1e5;
If=1;

LaFm=0.9;
La0=0.9;
L2=0.3;
Lab0=0.9;
Lff=2;

LaF=LaFm*cos(Theta);
LbF=LaFm*cos(Theta-2Pi/3);
LcF=LaFm*cos(Theta+2Pi/3);

Laa=La0+L2*cos(2*(Theta));
Lbb=La0+L2*cos(2*(Theta-2Pi/3));
Lcc=La0+L2*cos(2*(Theta+2Pi/3));

Lab=-Lab0+L2*cos(2*(Theta+2Pi/3));
Lbc=-Lab0+L2*cos(2*(Theta));
Lca=-Lab0+L2*cos(2*(Theta-2Pi/3));

FiaS=Laa*Ia+Lab*Ib+Lca*Ic;
FibS=Lab*Ia+Lbb*Ib+Lbc*Ic;
FicS=Lca*Ia+Lbc*Ib+Lcc*Ic;

TokStatorX=FiaS*cos(0)+FibS*cos(2Pi/3)+FicS*cos(-2Pi/3);
TokStatorY=FiaS*sin(0)+FibS*sin(2Pi/3)+FicS*sin(-2Pi/3);

Fia=FiaS+LaF*If;

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Fib=FibS+LbF*If;
Fic=FicS+LcF*If;

TokRotorX=Lff*If*cos(Theta-1Pi/2);
TokRotorY=Lff*If*sin(Theta-1Pi/2);

Kd= 0.8165; : sqrt(2/3)
Kq= 0.8165; : sqrt(2/3)
K0= 0.5774; : sqrt(1/3)

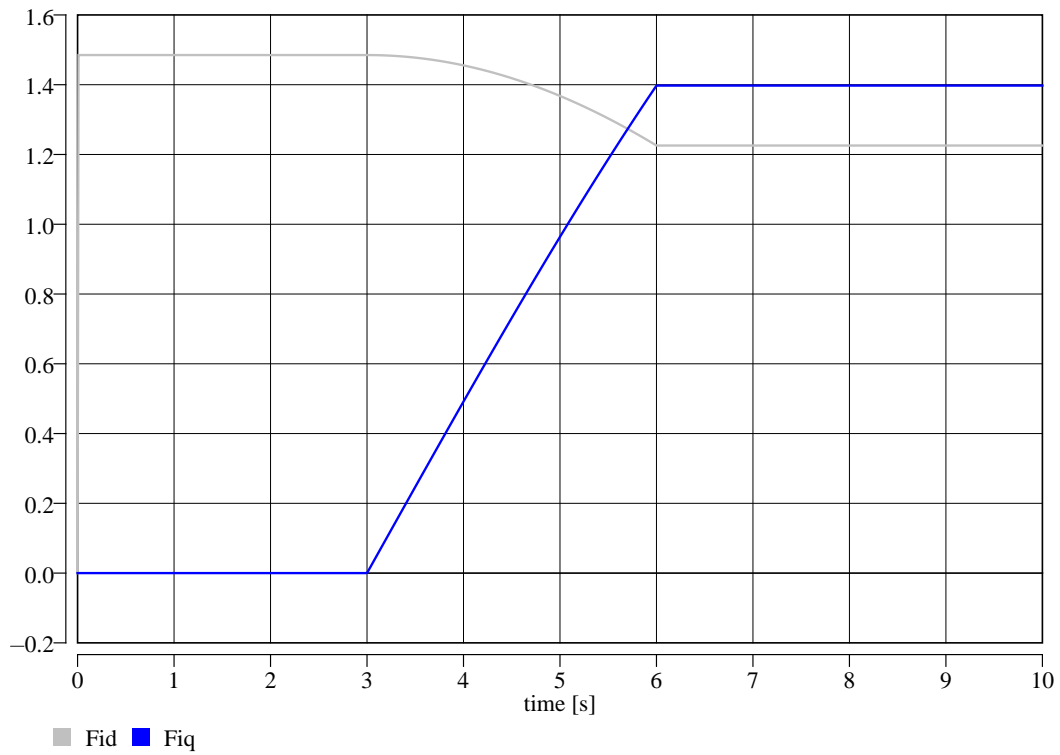
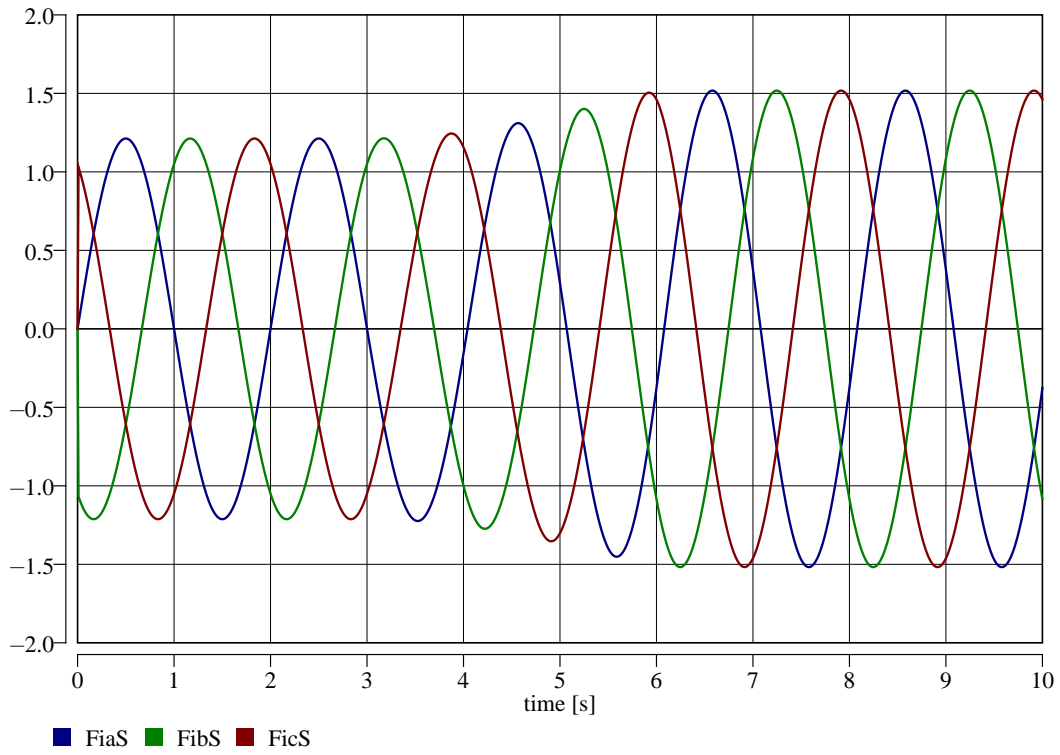
Fid= Kd*(FiaS*cos(Theta-1Pi/2)+FibS*cos(Theta-2Pi/3-1Pi/2)+FicS*cos(Theta+2Pi/3-1Pi/2));
Fiq= Kq*(FiaS*sin(Theta-1Pi/2)+FibS*sin(Theta-2Pi/3-1Pi/2)+FicS*sin(Theta+2Pi/3-1Pi/2));
Fi0= K0*(FiaS+FibS+FicS);

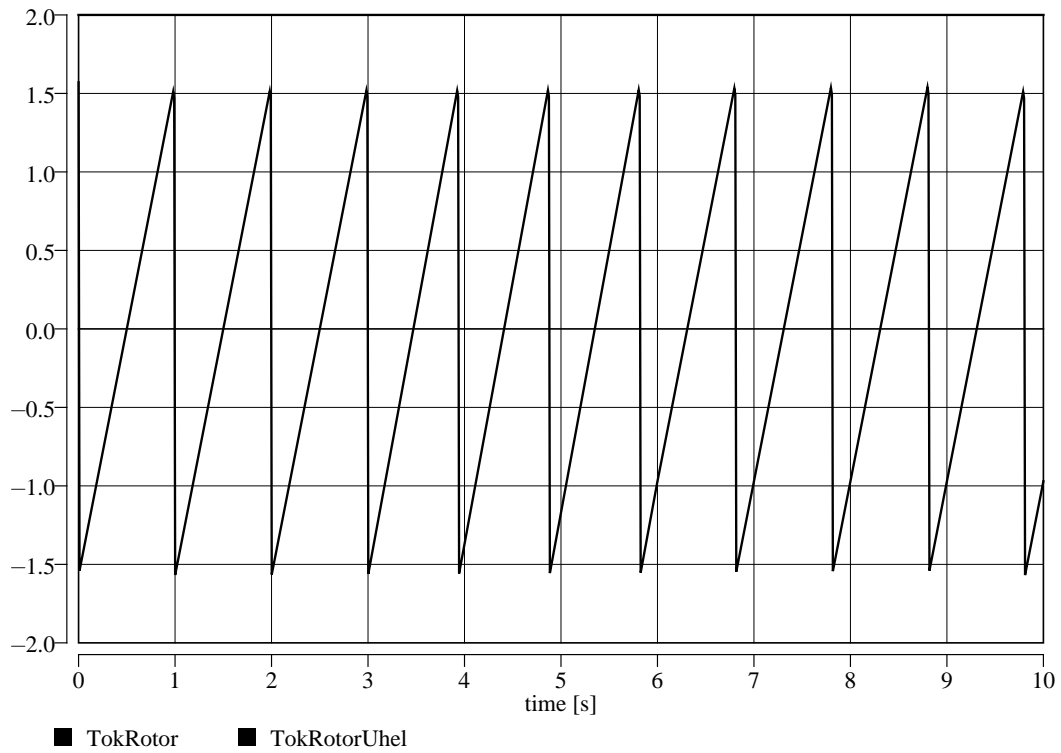
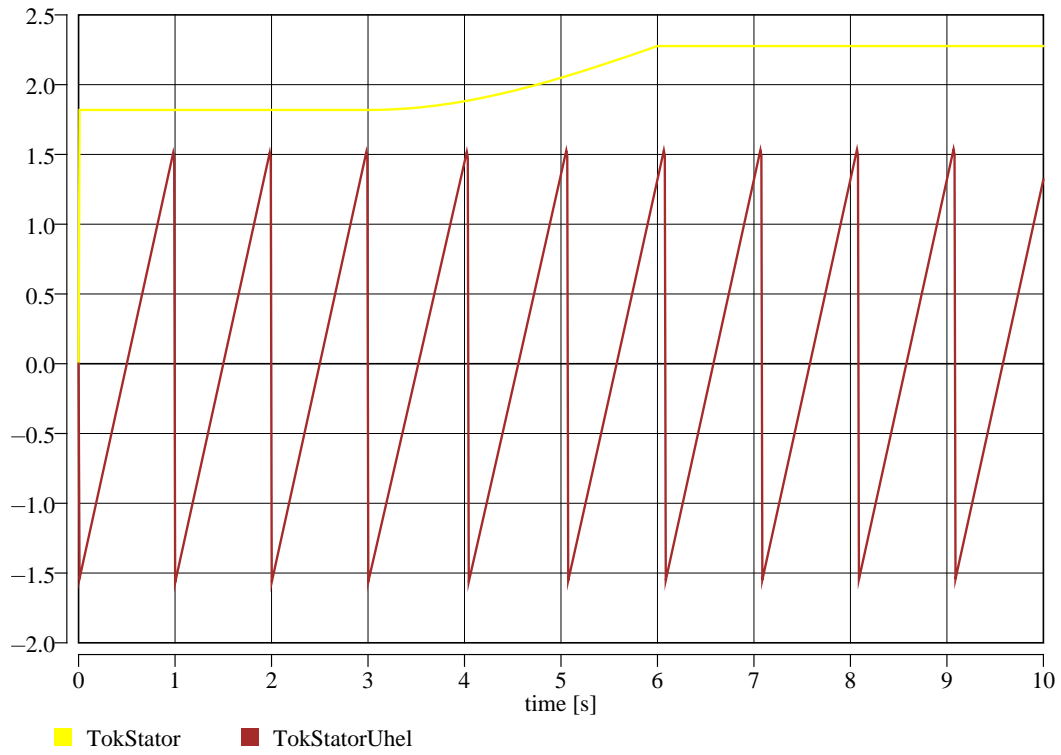
FidX=Fid*cos(Theta-1Pi/2);
FidY=Fid*sin(Theta-1Pi/2);
FiqX=Fiq*cos(Theta-1Pi);
FiqY=Fiq*sin(Theta-1Pi);

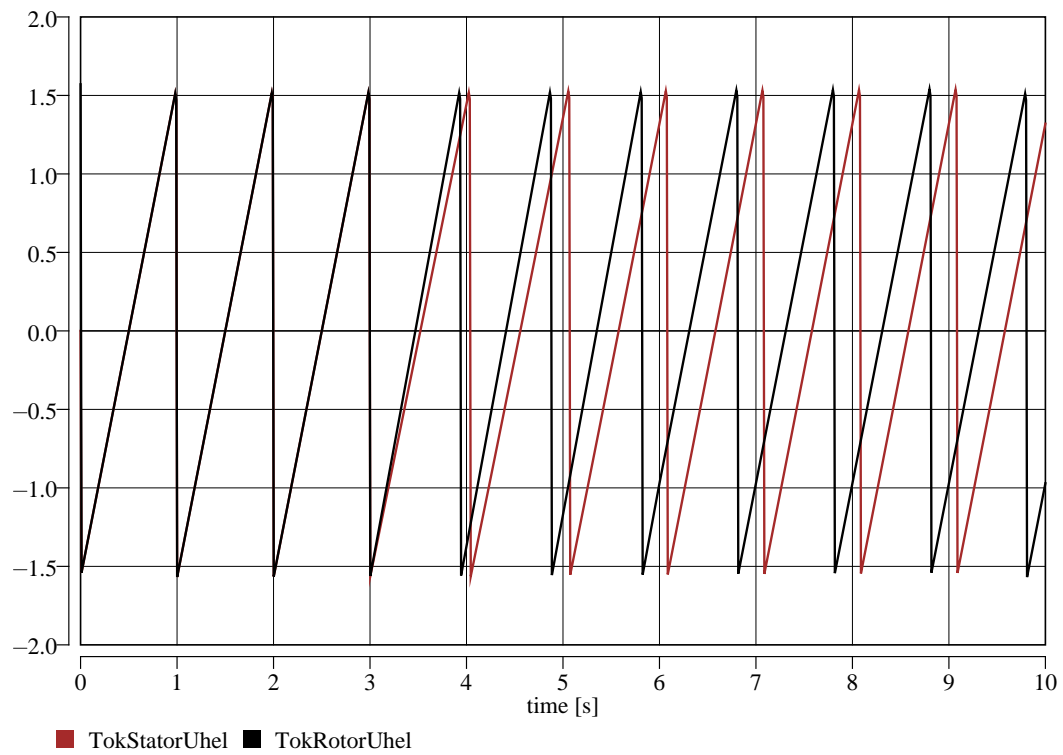
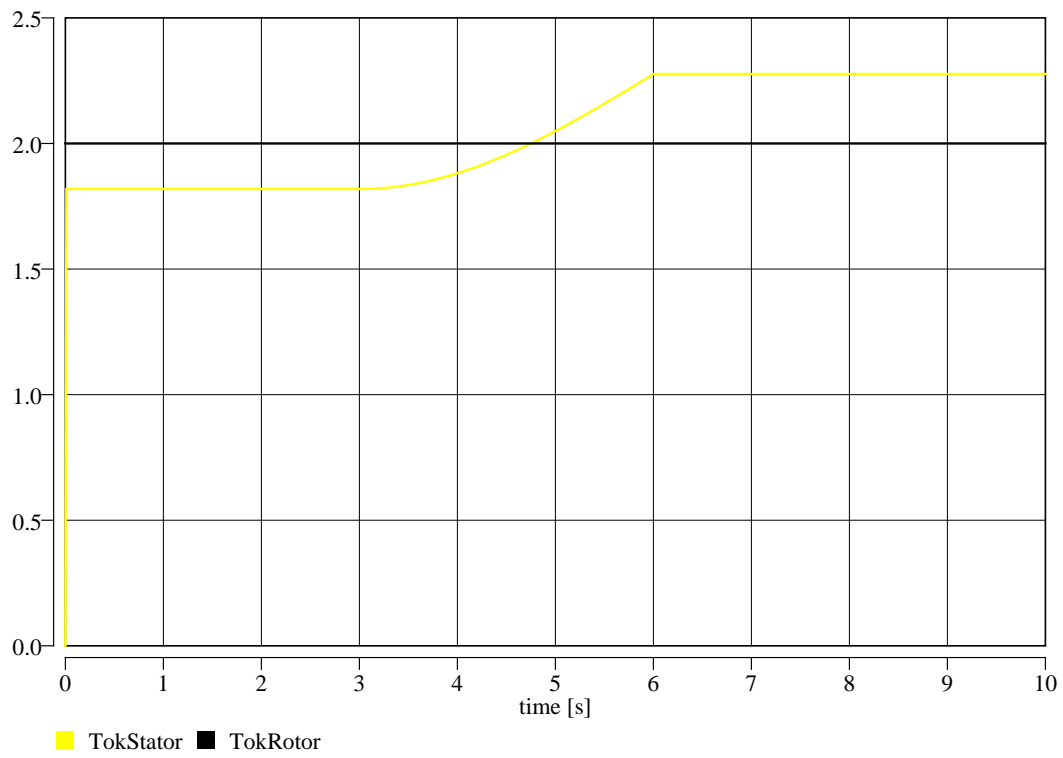
TokStator=sqrt(TokStatorX*TokStatorX+TokStatorY*TokStatorY);
TokStatorUhel=ATAN(TokStatorY/TokStatorX);

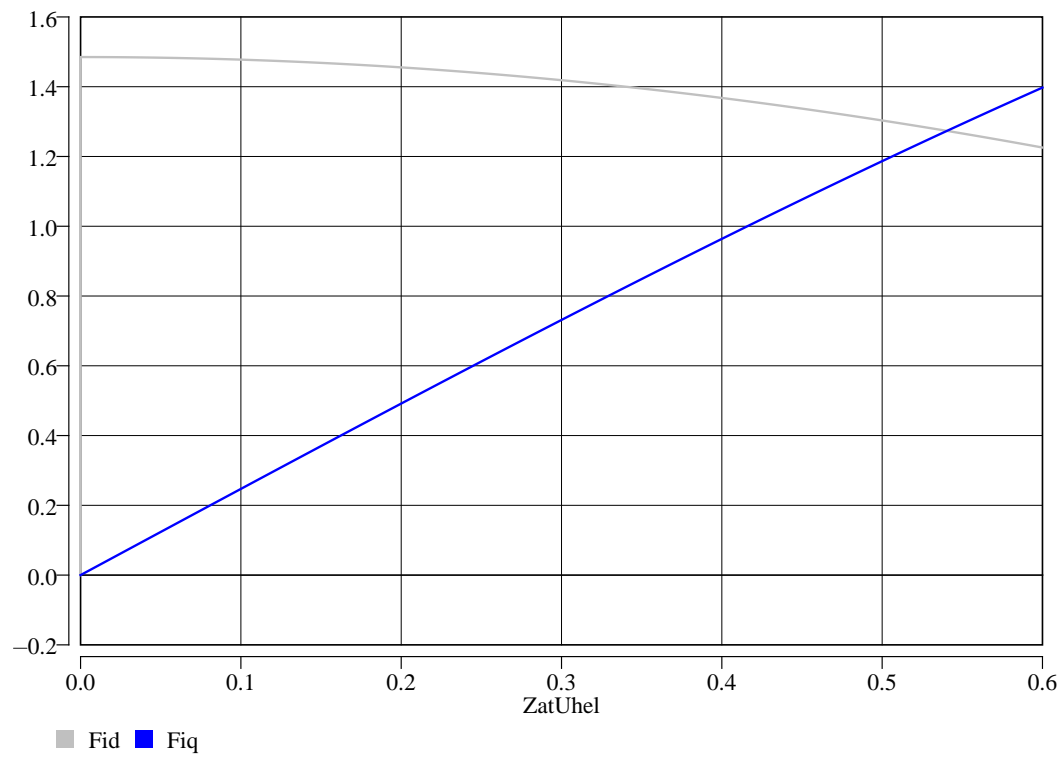
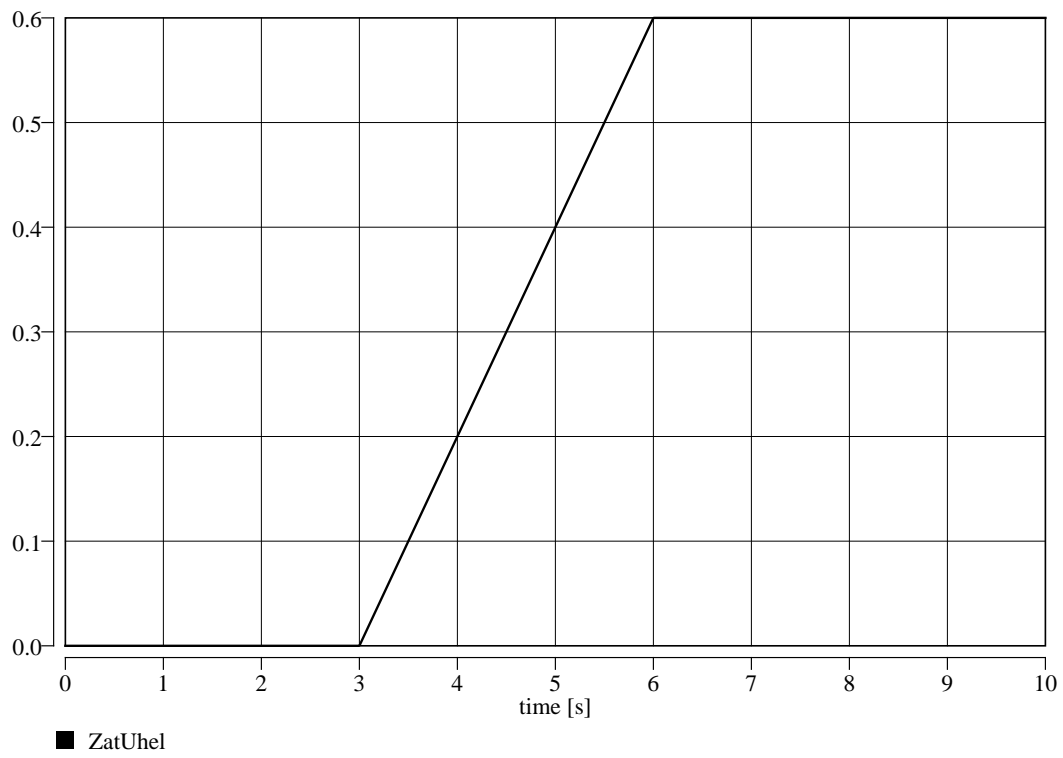
TokRotor=sqrt(TokRotorX*TokRotorX+TokRotorY*TokRotorY);
TokRotorUhel=ATAN(TokRotorY/TokRotorX);

*TR;
TR 0 10;
PRINT(1000) FiaS, FibS, FicS, TokStatorX, TokStatorY,
            TokRotorX, TokRotorY, Fid, Fiq, FidX, FidY, FiqX, FiqY,
            TokStator, TokStatorUhel, TokRotor, TokRotorUhel,
            ZatUhel;
RUN;
*END;
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**Origin**

Karel Nohá , KEE, FEL, Z U v Plzni

**Last Update**

April 1, 2021