



Priključak poligonskog vlaka na visoku točku

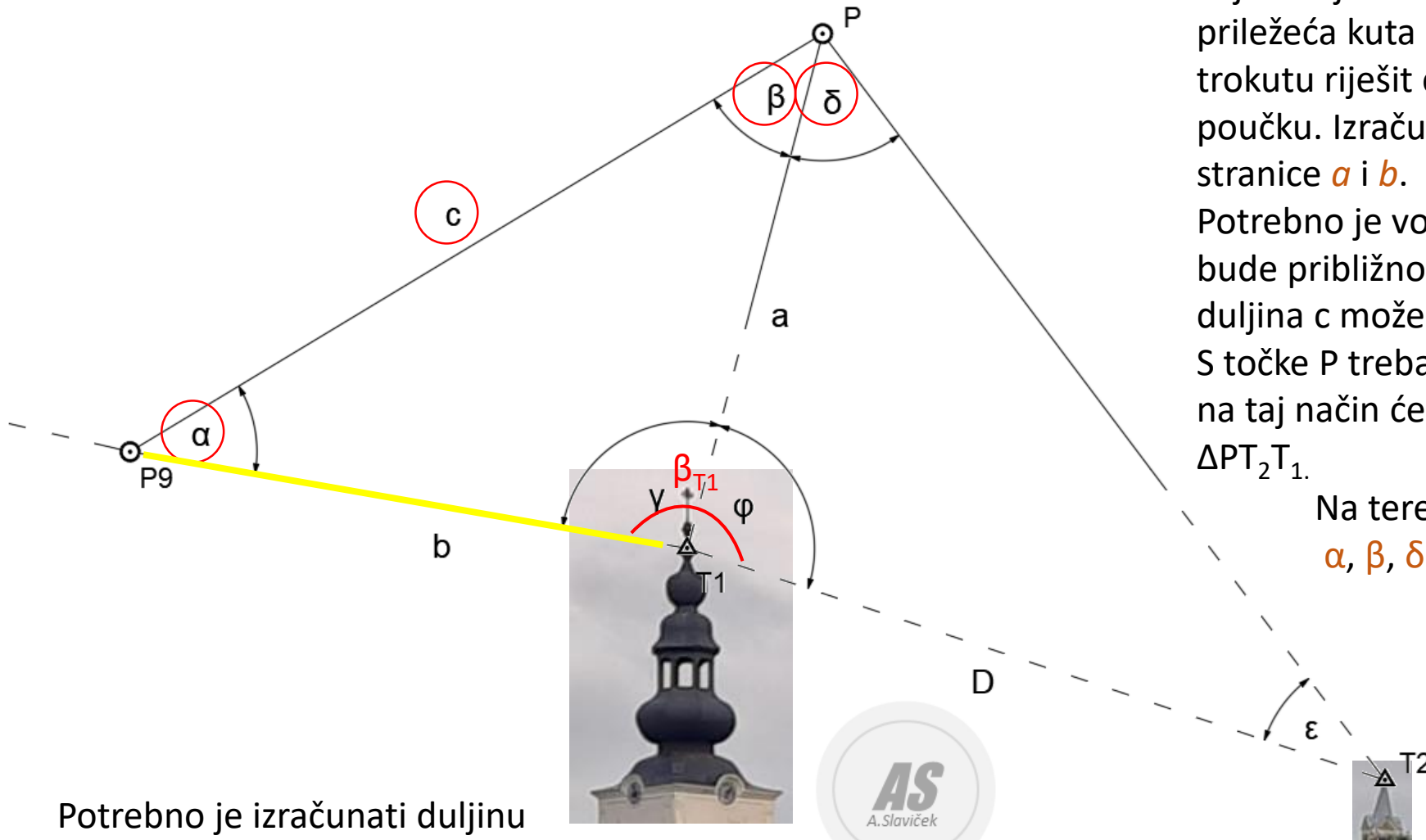
Poligonski vlak



Kako odrediti vezni kut β_{T1} i poligonsku stranicu P9T1?



Postavimo pomočnu točku P



Postavimo na terenu trokut ΔP_9PT_1 u kojem mjerimo jednu stranicu c i dva priležeca kuta α i β . Ostale veličine u trokutu riješit ćemo po sinusovom poučku. Izračunati ćemo kut γ i stranice a i b .

Potrebno je voditi računa da trokut bude približno jednakokraničan i da se duljina c može točno izmjeriti.

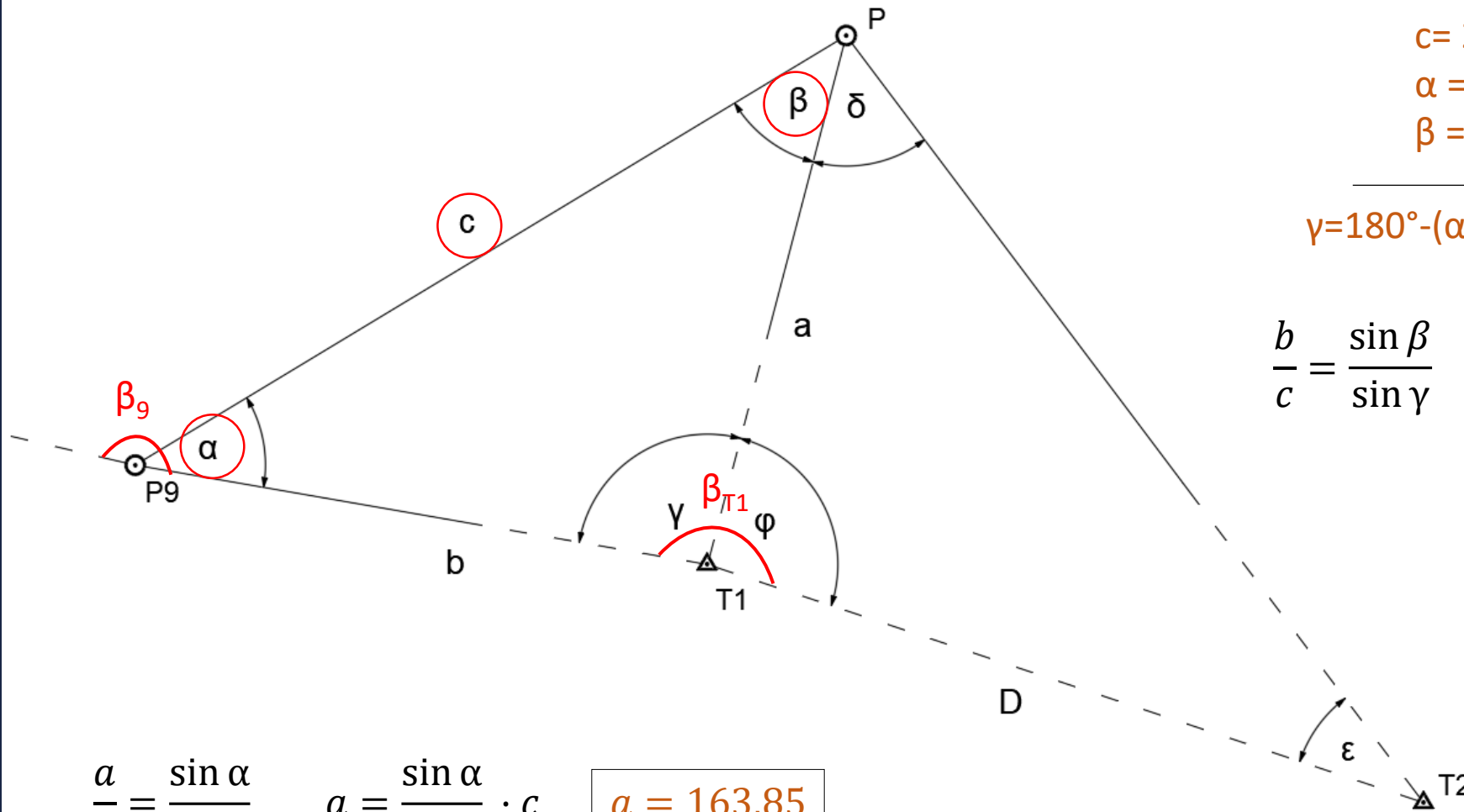
S točke P treba se dogledati točka T_2 i na taj način ćemo formirati trokut ΔPT_2T_1 .

Na terenu ćemo mjeriti kutove α , β , δ i duljinu stranice c .

Potrebno je izračunati duljinu poligonske stranice b i vezni kut β_{T_1}



ΔP_9PT_1



$c = 249.05$
 $\alpha = 40-57-44$
 $\beta = 44-11-27$

$$\gamma = 180^\circ - (\alpha + \beta) \rightarrow 94-50-49$$

$$\frac{b}{c} = \frac{\sin \beta}{\sin \gamma}$$

$$b = \frac{\sin \beta}{\sin \gamma} \cdot c$$

$$b = 174,22$$

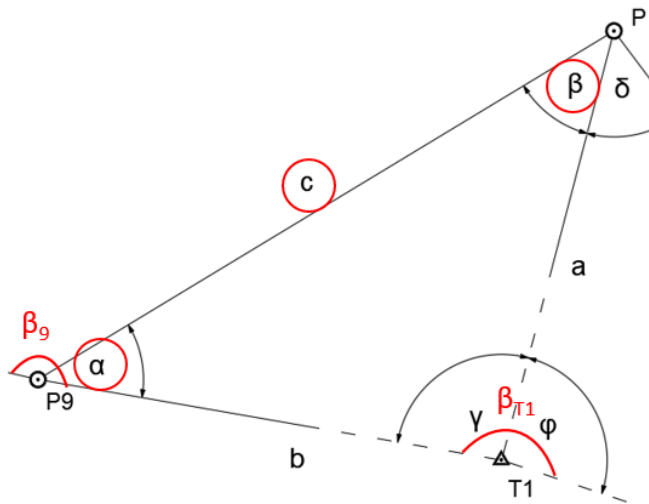
$$\frac{a}{c} = \frac{\sin \alpha}{\sin \gamma}$$

$$a = \frac{\sin \alpha}{\sin \gamma} \cdot c$$

$$a = 163,85$$



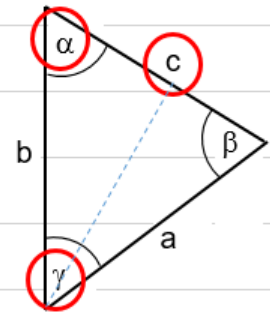
ΔP_9PT_1



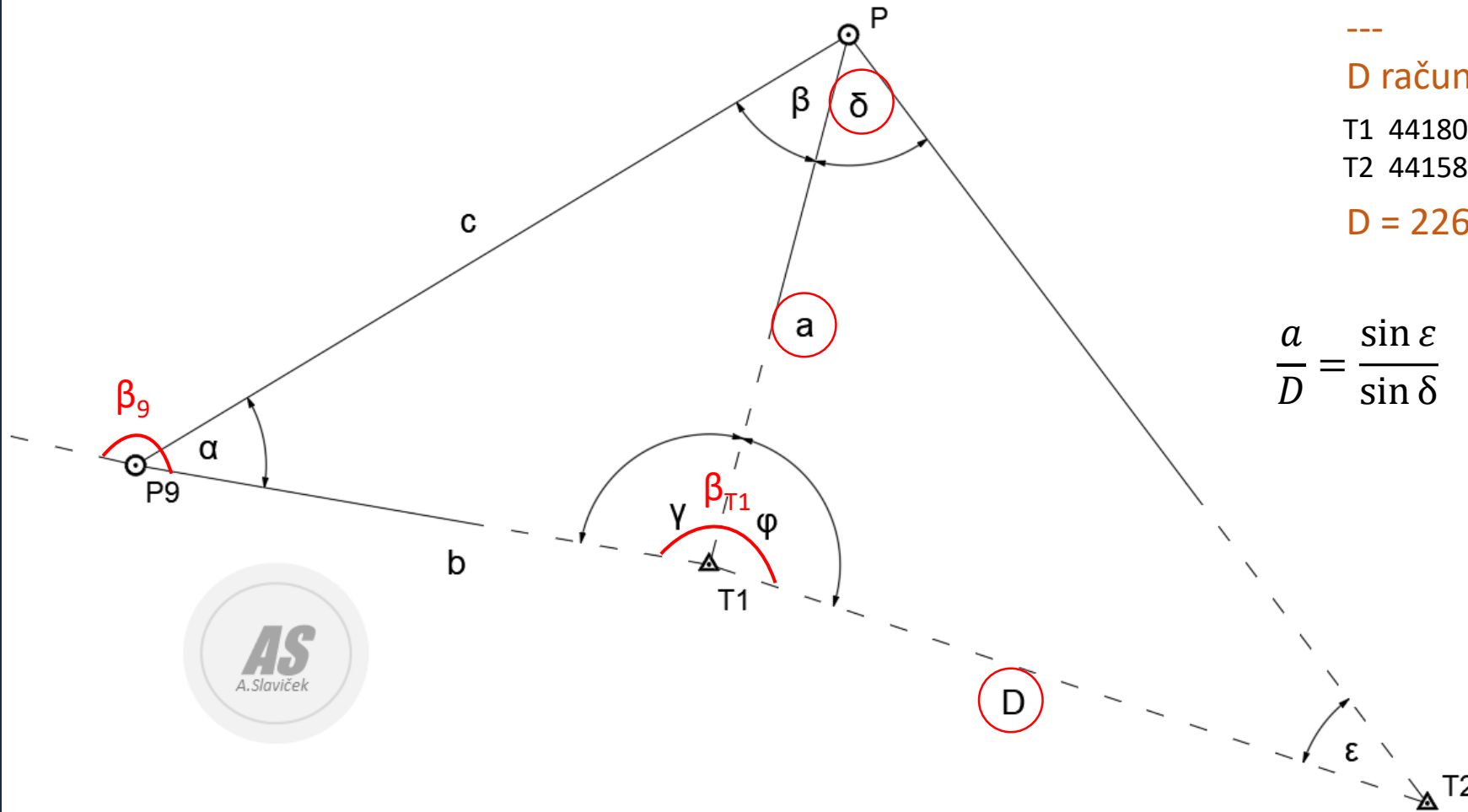
Računanje trokuta po sinusovom poučku

Trigonometrijski obrazac br. 13.

Sinusov poučak	Mjereni kutovi			Izjednačeni kutovi	sin α	Mjereni dijelovi	Mjereni dijelovi
	$\frac{a}{\sin \alpha} = \frac{b}{\sin \beta} = \frac{c}{\sin \gamma} = m$	α	β		sin β		
TROKUT	$f_\beta = 180^\circ - (\alpha' + \beta' + \gamma')$				sin γ	$b \cdot \cos \alpha$	$b = m \cdot \sin \beta$
	$v_\beta = f_\beta / 3$				$m = \frac{c}{\sin \gamma}$	c	$c = a \cdot \cos \beta + b \cdot \cos \alpha$
AS	o	'	"	o	'	"	ASlaviček
	40	57	44				163,85
	44	11	27				174,22
	94	50	49				249,05
	180	00	00				
							117,48657
							Kontrola:
							249,05
					249,94	131,563427	



ΔPT_2T_1



$a = 163,85$
 $\delta = 51-40-57$

D računamo iz koordinata

T1 441801.23, 5104180.74
 T2 441586.55, 5104252.09

$D = 226,23$

$$\frac{a}{D} = \frac{\sin \varepsilon}{\sin \delta}$$

$$\sin \varepsilon = \frac{a}{D} \cdot \sin \delta$$

$$\varepsilon = 34-37-41$$

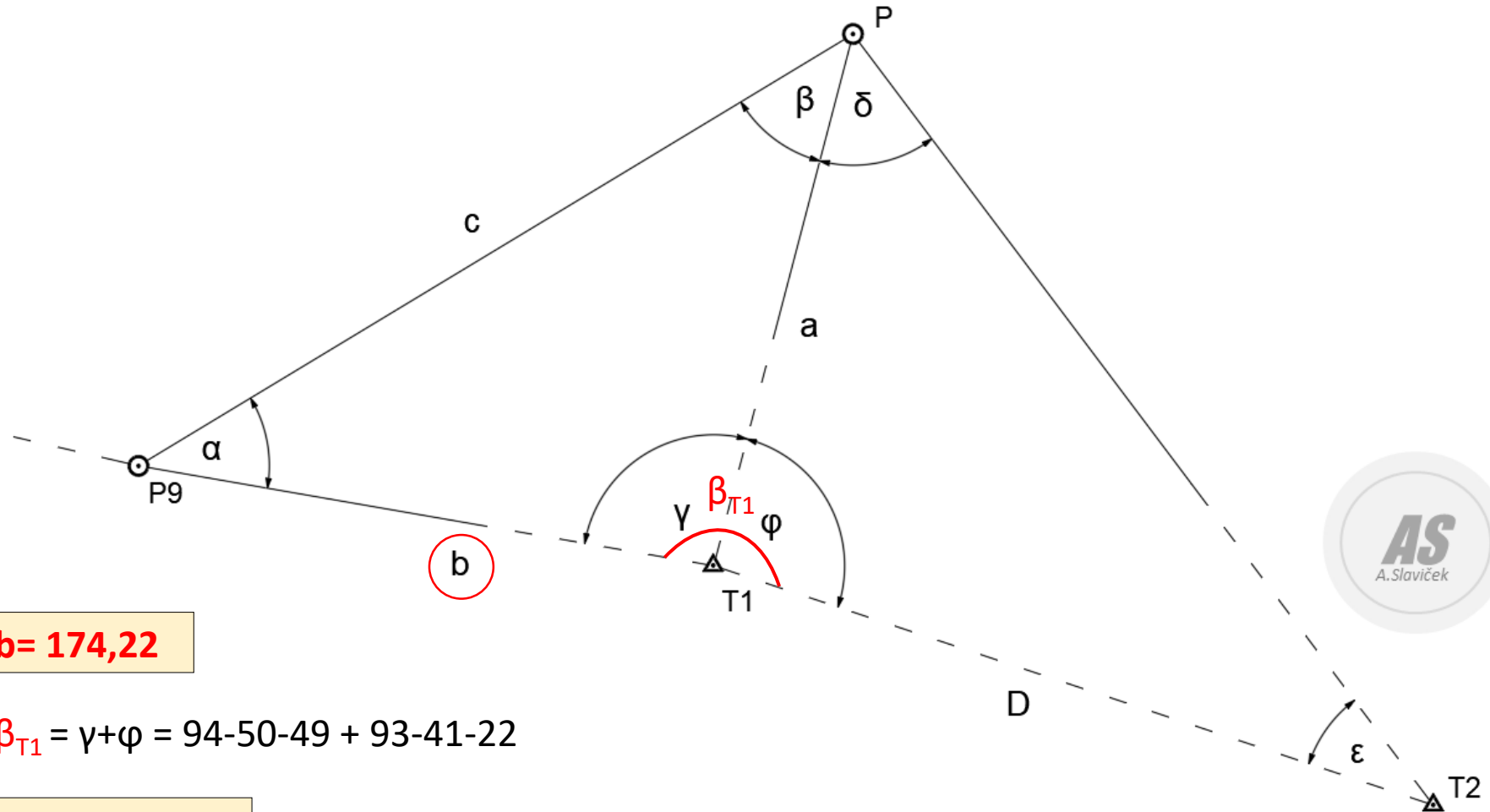
$$\varphi = 180^\circ - (\delta + \varepsilon)$$

$$\varphi = 93-41-22$$

Kontrola
 $\alpha + \beta + \gamma = 180^\circ$



Vezni kut β_{T_1} i duljina poligonske stranice P_9T_1



$$b = 174,22$$

$$\beta_{T_1} = \gamma + \phi = 94-50-49 + 93-41-22$$

$$\beta_{T_1} = 188-32-11$$

Zadatak

Izračunaj vezni kut β_{T_1} i duljinu poligonske stranice P_9T_1 .

Mjereno i zadano:

$$c = 259.17$$

$$\alpha = 43-06-31$$

$$\beta = 42-03-43$$

$$\delta = 49-33-44$$

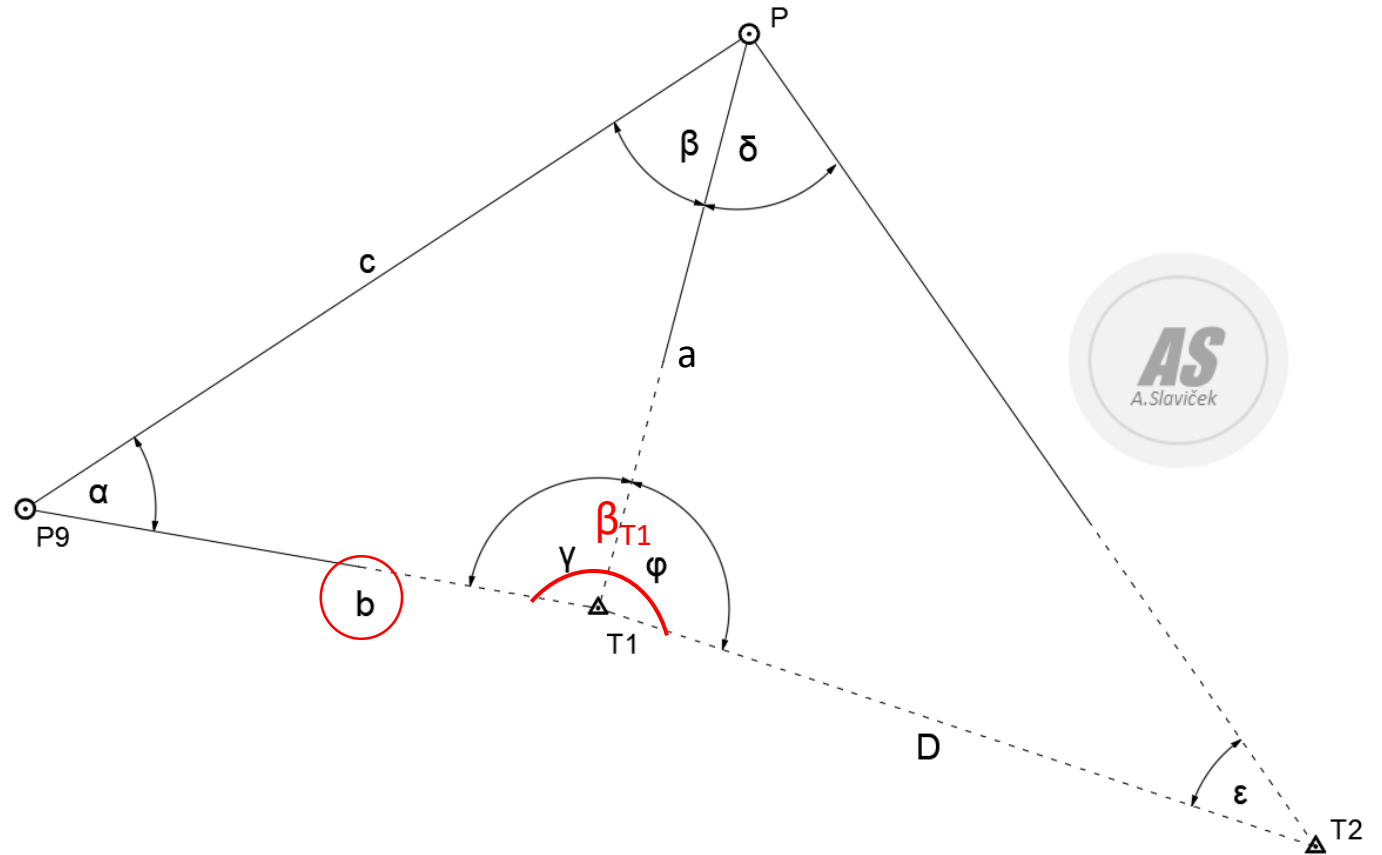
Koordinate točka

T1 441801.23, 5104180.74

T2 441586.55, 5104252.09

$$P_9T_1 = b = ?$$

$$\beta_{T_1} = ?$$





*Pravoslavijem
na pařnji.*

A. Slavicek

