

# Kapitel I

## Understanding Hypoplasticity

### I.1 Hypoplasticity model for clays

#### **Parameters :**

Parameters taken from Mašin, D. (2014). Géotechnique 64, No. 3, 232–238 [<http://dx.doi.org/10.1680/geot.13.P.065>]  
Parameter description from: <https://web.natur.cuni.cz/uhigug/masin/plaxumat/node6.html>

Parameters	Description	Value	Comments
1: $\phi_c$	critical state friction angle	21.9	
2: $p_t$	shift of the mean stress due to cohesion	$1 \cdot 10^{-5}$	
3: $\lambda^*$	parameters of the basic hypoplastic model for clays	0.095	
4: $\kappa^*$	parameters of the basic hypoplastic model for clays	0.015	
5: $N$	Parameters of the basic hypoplastic model for clays	1.19	
6: $\gamma_{pp}$	Parameters of the basic hypoplastic model for clays	0.1	
7: $a_G$	ratio of horizontal and vertical shear moduli	2	
8: $k$	parameters of the model for clays with meta-stable structure	0	
9: $A$	parameters of the model for clays with meta-stable structure	0	
10: $s_f$	parameters of the model for clays with meta-stable structure	0	
11: $R$	Intergranular strain concept parameters	$5 \cdot 10^{-5}$	
12: $\beta_r$	Intergranular strain concept parameters	0.08	
13: $\chi$	Intergranular strain concept parameters	0.9	
14: $A_g$	Very small strain shear stiffness parameters	270	
15: $n_g$	Very small strain shear stiffness parameters	1	
16: $m_{nat}$	Intergranular strain concept parameter	0.5	
17: $K_w$	bulk modulus of water	0	
18: <i>vertical direction</i>	Specifies vertical direction in PLAXIS	3	takes value 0, 1 or 2, z vertical $\rightarrow$ 2
19: $\alpha_E$	ratio of horizontal and vertical Young moduli	0	
20: $\alpha_v$	ratio of horizontal and vertical Poisson ratios	0	
21: $\alpha_f$	Additional control of non-linearity inside state boundary surface	0	
22: $e$	initial void ratio or overconsolidation ratio	0	Calculated internally if $e = 0$