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# 3D-Makro-Basis

DGS-Regionalgruppe Ulm/Laupheim

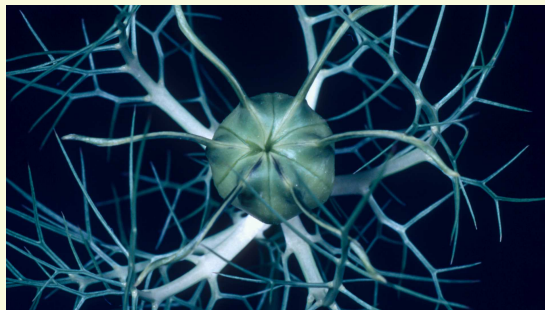
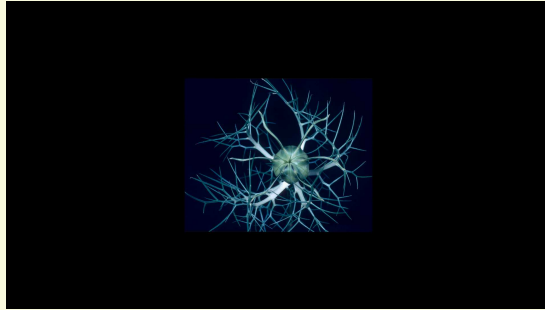


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# Welche Basis bei 3D-Makro ?

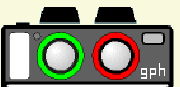
Kugelförmiges Objekt, Höhe = Tiefe (= egal)  
Wie groß wird das Objekt im Verhältnis zur Bildbreite abgebildet?



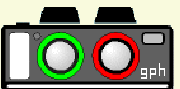
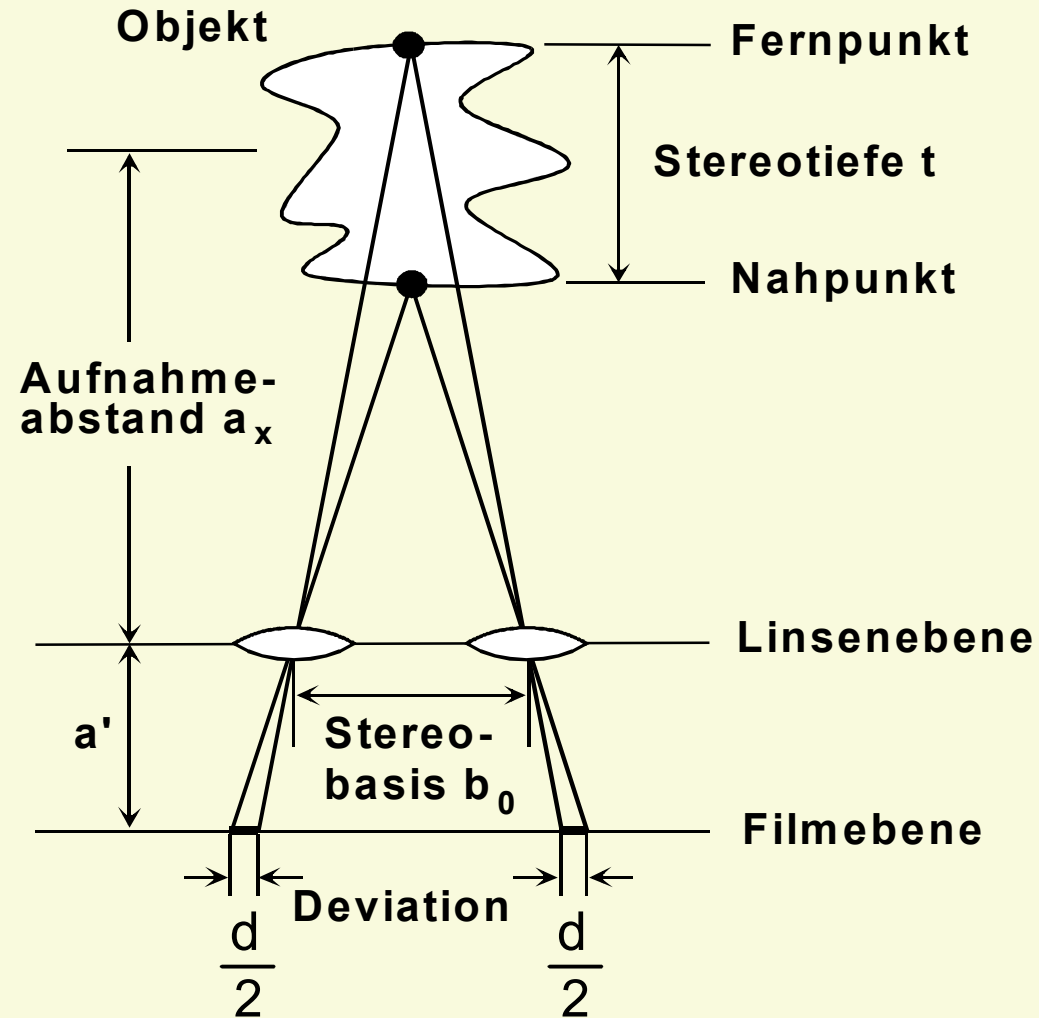
$\beta_t = 1/3$  [Bildbreite]

$\beta_t = 2/3$  [Bildbreite] - Standard!

$\beta_t = 4/3$  [Bildbreite]



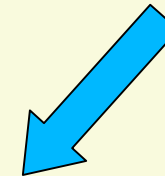
# 1. Generelle Situation



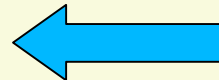
## 2. Strahlensatz

*Hier nur Ergebnis:*

**Deviation**



**Stereobasis**

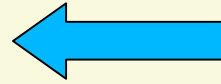


$$b_0 = \frac{d}{a'} \cdot \frac{a_F \cdot a_N}{a_F - a_N}$$



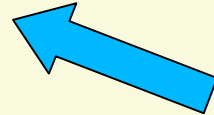
### 3. Näherung

$$b_0 = \frac{d}{a'} \cdot \frac{a_F \cdot a_N}{a_F - a_N}$$



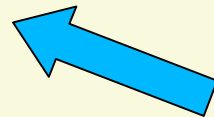
$$a_X^2 = a_N \cdot a_F$$

**Abstandsformel**  
(gleiche Schärfe  
bei  $a_N$  und  $a_F$ )



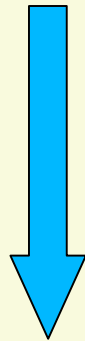
$$t = a_F - a_N$$

**Abkürzung**



$$\beta = \frac{a'}{a_X}$$

**$\beta$ : Vergrößerung**

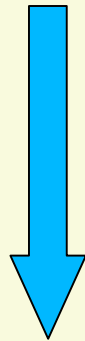


$$b_0 = \frac{d \cdot a_X}{\beta \cdot t}$$



# 4. Praxis-Input

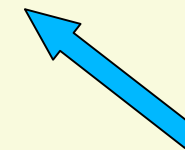
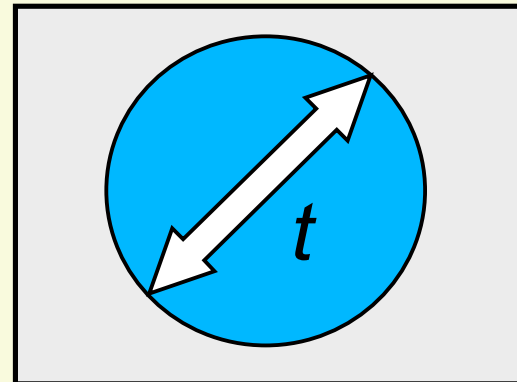
$$b_0 = \frac{d \cdot a_X}{\beta \cdot t}$$



$$b_0 = \frac{a_X}{20}$$

$d = \text{Bildbreite}/30$

$\beta t = 2/3 \text{ Bildbreite}$



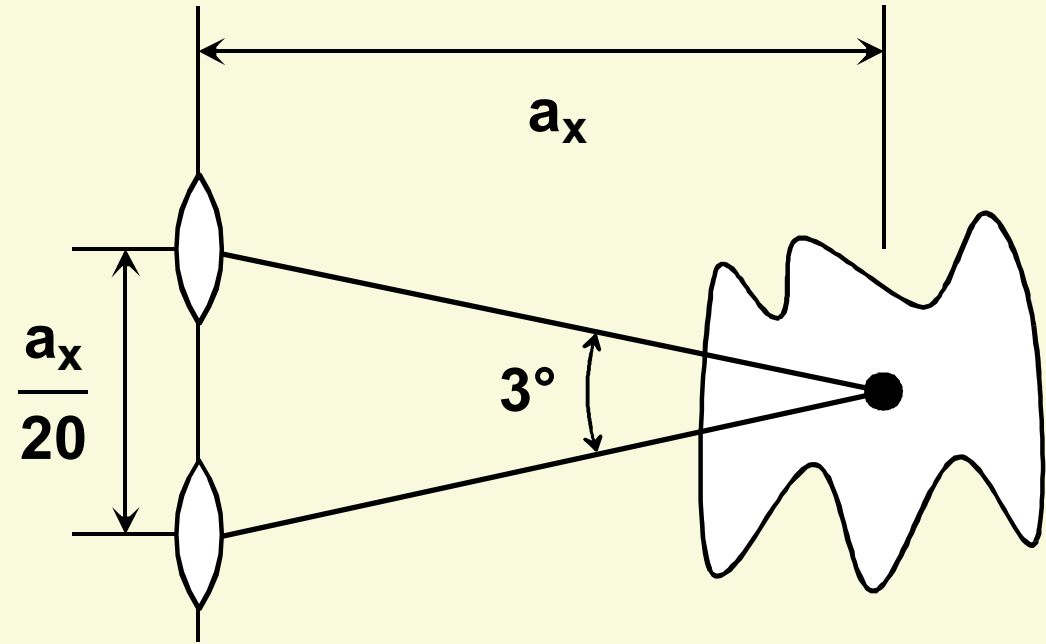
*Standardtiefe des  
Objektes im fertigen Bild*

Die Stereobasis-Grundformel, *stereo journal*, Heft 70, Seite 30  
ISU Stereoscropy, Series 2 - Number 25, Seite 24



# 5. Makro-Basis

$$b_0 = \frac{a_x}{20}$$



$$\tan(3^\circ) \sim 1/20$$

