

		Bewegtes System				
		0 ruhendes System	Senkrecht zur Bewegung		Parallel zur Bewegung	
			H ruhender Betrachter	T bewegter Betrachter	V ruhender Betrachter	M bewegter Betrachter
1	Lichtgeschwindigkeit	c	c	c	c	c
2	Geschwindigkeit	v	v	v	v	v
3	Länge	l_0	$l_H=l_0$	$l_T=l_0$	$l_V=l_0/\gamma$	$l_M=l_V*\gamma=l_0$
4	Strahlstrecke hin und her	$s_0=2l_0$	$s_H= s_{H1}+s_{H2}=2l_0*\gamma$	$s_T=s_H/\gamma$	$s_V=2l_V*1/(1-v^2/c^2)$	$s_M=s_V/\gamma$
5	Strahlstrecke hin	$s_1=l_0$	$s_{H1}=s_H/2$	$s_{T1}=s_{H1}/\gamma$	$s_{V1}=l_V+t_{V1}v= l_V*1/(1-v/c)$	$s_{M1}=s_{V1}/\gamma$
6	Strahlstrecke her	$s_2=l_0$	$s_{H2}=s_H/2$	$s_{T2}=s_{H2}/\gamma$	$s_{V2}=l_V-t_{V2}v= l_V*1/(1+v/c)$	$s_{M2}=s_{V2}/\gamma$
7	Strahllaufzeit hin und her	$t_0=2l_0/c$	$t_H=t_0*\gamma=s_H/c$	$t_T=t_H/\gamma=t_0$	$t_V=t_{V1}+t_{V2}=s_V/c=2l_V/c*1/(1-v^2/c^2)=2l_0/c*\gamma$	$t_M=t_V/\gamma=t_0$
8	Strahllaufzeit hin	$t_1=s_0/(2c)$	$t_{H1}=t_H/2$	$t_{T1}=t_{H1}/\gamma$	$t_{V1}=l_V/(c-v)=s_{V1}/c$	$t_{M1}=t_{V1}/\gamma$
9	Strahllaufzeit her	$t_2=s_0/(2c)$	$t_{H2}=t_H/2$	$t_{T2}=t_{H2}/\gamma$	$t_{V2}=l_V/(c+v)=s_{V2}/c$	$t_{M2}=t_{V2}/\gamma$
10	Relatives c in beide Richtungen	$c_0=c$	$c_H=2l_H/t_H$	$c_T=2l_T/t_T=c$	$c_V=2l_V/t_V=c*(1-v^2/c^2)$	$c_M=2l_M/t_M=c$
11	Relatives c in Strahlrichtung	$c_1=c$	$c_{H1}=l_H/t_{H1}$	$c_{T1}=l_T/t_{T1}$	$c_{V1}=l_V/t_{V1}=c-v$	$c_{M1}=l_M/t_{M1}=(c-v)*\gamma^2$
12	Relatives c gegen Strahlrichtung	$c_2=c$	$c_{H2}=l_H/t_{H2}$	$c_{T2}=l_T/t_{T2}$	$c_{V2}=l_V/t_{V2}=c+v$	$c_{M2}=l_M/t_{M2}=(c+v)*\gamma^2$
13	Emissionsfrequenz \neq Dopplerfrequenz	$f_0=c/\lambda_1$	$f_H=f_0/\gamma$	$f_T=f_0$	$f_V=f_0/\gamma$	$f_M=f_0$
14	Anzahl Wellenmaxima hin u. her	$N_0=f_0t_0=f_02l_0/c$	$N_H=f_Ht_H=f_0t_0$	$N_T=N_{T1}+N_{T2}$	$N_V=f_Vt_V=f_02l_0/c=N_{V1}+N_{V2}$	$N_M=N_{M1}+N_{M2}$
15	Anzahl Wellenmaxima hin	$N_1=f_0/t_1$	$N_{H1}=f_H*s_{H1}/c$	$N_{T1}=f_T*s_{T1}/c$	$N_{V1}=f_V*s_{V1}/c=f_0l_0/(c-v)*1/\gamma^2$	$N_{M1}=f_M*s_{M1}/c=f_0l_0/(c-v)*1/\gamma^2$
16	Anzahl Wellenmaxima her	$N_2=f_0/t_2$	$N_{H2}=f_H*s_{H2}/c$	$N_{T2}=f_T*s_{T2}/c$	$N_{V2}=f_V*s_{V2}/c=f_0l_0/(c+v)*1/\gamma^2$	$N_{M2}=f_M*s_{M2}/c=f_0l_0/(c+v)*1/\gamma^2$
17	Wellenlänge λ hin	λ_1	$\lambda_{H1}=s_{H1}/N_{H1}=\lambda_1*\gamma$	$\lambda_{T1}=s_{T1}/N_{T1}$	$\lambda_{V1}=s_{V1}/N_{V1}=\lambda_1*\gamma$	$\lambda_{M1}=s_{M1}/N_{M1}$
18	Wellenlänge λ her	$\lambda_2=\lambda_1$	$\lambda_{H2}=s_{H2}/N_{H2}=\lambda_2*\gamma$	$\lambda_{T2}=s_{T2}/N_{T2}$	$\lambda_{V2}=s_{V2}/N_{V2}=\lambda_2*\gamma$	$\lambda_{M2}=s_{M2}/N_{M2}$
	Korrekturfaktor γ	$\gamma=1/\sqrt{1-v^2/c^2}$				