$$
\begin{aligned}
K_1(t) = \;& \tfrac{1}{2}A_0^2\left[(1+\cos\phi_s)e^{-\Gamma_L t}+(1-\cos\phi_s)e^{-\Gamma_H t}+2e^{-\Gamma_s t}\sin(\Delta m_s t)\sin\phi_s\right],\\
K_2(t) = \;& \tfrac{1}{2}A_{||}^2\left[(1+\cos\phi_s)e^{-\Gamma_L t}+(1-\cos\phi_s)e^{-\Gamma_H t}+2e^{-\Gamma_s t}\sin(\Delta m_s t)\sin\phi_s\right],\\
K_3(t) = \;& \tfrac{1}{2}A_{\perp}^2\left[(1-\cos\phi_s)e^{-\Gamma_L t}+(1+\cos\phi_s)e^{-\Gamma_H t}-2e^{-\Gamma_s t}\sin(\Delta m_s t)\sin\phi_s\right],\\
K_4(t) = \;& |A_{||}||A_{\perp}|[e^{-\Gamma_s t}\{\sin\delta_1\cos(\Delta m_s t)-\cos\delta_1\sin(\Delta m_s t)\cos\phi_s\}\\
& -\tfrac{1}{2}\left(e^{-\Gamma_H t}-e^{-\Gamma_L t}\right)\cos\delta_1\sin\phi_s],\\
K_5(t) = \;& \tfrac{1}{2}|A_0||A_{||}|\cos(\delta_2-\delta_1)\\
& \left[(1+\cos\phi_s)e^{-\Gamma_L t}+(1-\cos\phi_s)e^{-\Gamma_H t}+2e^{-\Gamma_s t}\sin(\Delta m_s t)\sin\phi_s\right],\\
K_6(t) = \;& |A_0||A_{\perp}|[e^{-\Gamma_s t}\{\sin\delta_2\cos(\Delta m_s t)-\cos\delta_2\sin(\Delta m_s t)\cos\phi_s\}\\
& -\tfrac{1}{2}\left(e^{-\Gamma_H t}-e^{-\Gamma_L t}\right)\cos\delta_2\sin\phi_s]
\end{aligned}
$$

$$\mathcal{A}_{\rm l}^{\rm dir,SM} \cong 0,$$

$$\mathcal{A}_{\rm l}^{\rm mix,SM} = \eta_{\rm l} \sin(\phi_{\rm s}^{\rm SM}) \cong 0,$$

$$\mathcal{A}_{\rm l}^{\Delta\Gamma,\rm SM} = \cos(\phi_{\rm s}^{\rm SM}) \cong 1.$$

$$cos(\phi_s^{SM}) = 1 - \frac{\phi_s^{SM\,2}}{2}$$

$$\phi_s^{SM} << 1 \qquad \beta_s = \frac{\phi_s^{SM}}{2}$$

$$\tilde{BR} = \frac{1}{2}(A_0 + \bar{A}_0)$$

$$sin^2(\frac{\phi_s^{SM}}{2}) = \frac{\phi_s^{SM\,2}}{4} = 1 - cos^2(\frac{\phi_s^{SM}}{2}) \qquad \frac{\phi_s^{SM\,2}}{4} = \frac{\tilde{BR}}{2|\lambda_c^{(D)}|^2|\Delta|^2}(1 - A_{\Delta\Gamma})$$

$$\frac{\phi_s^{SM\,2}}{4} = \frac{\tilde{BR}}{2|\lambda_c^{(D)}|^2|\Delta|^2}\frac{\phi_s^{SM\,2}}{2} \quad \Longrightarrow \quad \frac{\tilde{BR}}{2|\lambda_c^{(D)}|^2|\Delta|^2} = \frac{1}{2}?$$

$$\sin^2\beta_s = \frac{\widetilde{BR}}{2|\lambda_c^{(D)}|^2|\Delta|^2}\left(1 - \sqrt{1 - (\mathcal{A}_{\rm dir})^2 - (\mathcal{A}_{\rm mix})^2}\right)$$

$$\sin^2(\beta_s + \gamma) = \frac{\widetilde{BR}}{2|\lambda_u^{(D)}|^2|\Delta|^2}\left(1 - \sqrt{1 - (\mathcal{A}_{\rm dir})^2 - (\mathcal{A}_{\rm mix})^2}\right)$$

* http://arxiv.org/pdf/0705.0477 ---Penguin-mediated Bds -> VV decays and the Bs-Bs mixing angle. Matias, PRD 76, 074005 (2007)

* http://arxiv.org/pdf/0709.4013 ---Studying New Physics Amplitudes in charmless Bs Decays. R. Fleischer, M. Gronau. CERN-PH-TH/2007-169]

* http://arxiv.org/abs/hep-ph/0703137 ---B_s to K^(*)0 \bar K^(*)0 decays: the golden channels for new physics searches. M. Ciuchini, M. Pierini, L. Silvestrini. hep-ph/0703137.

*http://indico.cern.ch/contributionDisplay.py?contribId=1&confId=33924 --- Our last talk to CP-measurements WG (Aug. 14) .