

## Principal Components Analysis: NS LO quadratic

**PC00 (5.90e+05):**  $+0.699c_{\varphi G} - 0.597c_{\varphi B} + 0.334c_{\varphi WB} - 0.182c_{\varphi W} + 0.085c_{b\varphi} - 0.036c_{tW} + 0.032c_{tZ} + 0.028c_{c\varphi} + 0.026c_{tG} + 0.012c_{\tau\varphi}$

**PC01 (2.07e+05):**  $+0.709c_{\varphi G} + 0.594c_{\varphi B} - 0.327c_{\varphi WB} + 0.181c_{\varphi W} + 0.036c_{tW} + 0.033c_{b\varphi} - 0.032c_{tZ} + 0.029c_{tG} + 0.011c_{c\varphi}$

**PC02 (4.25e+03):**  $+0.879c_{\tau\varphi} - 0.360c_{b\varphi} - 0.233c_{\varphi WB} - 0.136c_{\varphi D} - 0.127c_{\varphi B} - 0.087c_{c\varphi} + 0.030c_{\varphi G} - 0.017c_{\varphi W} + 0.013c_{tG}$

**PC03 (2.78e+03):**  $-0.747c_{\varphi WB} - 0.433c_{\varphi D} - 0.397c_{\varphi B} - 0.290c_{\tau\varphi} + 0.071c_{c\varphi} + 0.065c_{b\varphi} - 0.050c_{\varphi W} - 0.023c_{tW} + 0.021c_{tZ}$

**PC04 (1.88e+03):**  $-0.871c_{b\varphi} - 0.378c_{\tau\varphi} - 0.290c_{c\varphi} + 0.079c_{\varphi G} + 0.072c_{tG} + 0.051c_{\varphi WB} - 0.016c_{\varphi B} - 0.013c_{\varphi W}$

**PC05 (2.86e+02):**  $-0.989c_{tG} - 0.067c_{qq}^{1,8} - 0.064c_{qt}^8 - 0.058c_{b\varphi} + 0.045c_{\varphi G} - 0.042c_{c\varphi} - 0.035c_{qu}^8 - 0.034c_{ut}^8 - 0.023c_{qd}^8 - 0.022c_{dt}^8 - 0.021c_{qq}^{1,3} + 0.020c_{tW} - 0.017c_{\varphi\Box} + 0.016c_{t\varphi} - 0.015c_{\tau\varphi} + 0.013c_{\varphi Q}^{(-)}$

**PC06 (2.18e+02):**  $-0.950c_{qq}^{1,3} + 0.300c_{\varphi Q}^3 + 0.082c_{tW} + 0.023c_{tG} + 0.014c_{c\varphi}$

**PC07 (1.02e+02):**  $-0.868c_{c\varphi} - 0.372c_{\varphi W} + 0.286c_{b\varphi} + 0.100c_{tW} + 0.072c_{\varphi B} - 0.070c_{\varphi\Box} - 0.065c_{\varphi WB} - 0.026c_{\varphi D} + 0.021c_{tG} + 0.013c_{\tau\varphi} + 0.013c_{t\varphi}$

**PC08 (8.28e+01):**  $-0.989c_{tW} - 0.088c_{c\varphi} - 0.084c_{qq}^{1,3} + 0.060c_{\varphi B} + 0.026c_{b\varphi} - 0.024c_{\varphi W} - 0.019c_{tG} + 0.017c_{qq}^{1,8} + 0.012c_{\varphi Q}^3 - 0.011c_{\varphi WB} + 0.011c_{ut}^8$

**PC09 (5.20e+01):**  $+0.568c_{qt}^8 - 0.514c_{qq}^{1,8} + 0.405c_{qu}^8 - 0.372c_{ut}^8 - 0.247c_{qq}^{8,3} + 0.163c_{qd}^8 - 0.147c_{dt}^8$

**PC10 (2.29e+01):**  $-0.570c_{\varphi W} + 0.455c_{qq}^{1,8} + 0.395c_{qt}^8 + 0.265c_{ut}^8 + 0.244c_{c\varphi} + 0.233c_{qu}^8 + 0.200c_{\varphi B} - 0.171c_{\varphi D} + 0.140c_{dt}^8 + 0.126c_{qd}^8 - 0.090c_{tG} - 0.080c_{b\varphi} - 0.060c_{qq}^{8,3} + 0.049c_{\varphi WB} - 0.038c_{\varphi Q}^{(-)} + 0.024c_{\varphi t} - 0.018c_{\varphi Q}^3 + 0.018c_{tW} - 0.012c_{t\varphi}$

**PC11 (2.14e+01):**  $-0.615c_{\varphi W} - 0.427c_{qq}^{1,8} - 0.366c_{qt}^8 + 0.252c_{c\varphi} - 0.246c_{ut}^8 + 0.219c_{\varphi B} - 0.213c_{qu}^8 - 0.197c_{\varphi D} - 0.129c_{dt}^8 - 0.115c_{qd}^8 - 0.071c_{b\varphi} + 0.064c_{qq}^{8,3} + 0.063c_{tG} + 0.056c_{\varphi WB} + 0.038c_{\varphi Q}^{(-)} - 0.026c_{\varphi t} - 0.021c_{t\varphi} + 0.016c_{\varphi Q}^3 - 0.014c_{tW} + 0.013c_{\varphi\Box}$

**PC12 (4.19e+00):**  $+0.950c_{\varphi Q}^3 + 0.299c_{qq}^{1,3} + 0.064c_{\varphi D} - 0.028c_{\varphi WB} - 0.024c_{\varphi W} + 0.024c_{qq}^{1,8} - 0.018c_{qq}^{8,3} - 0.016c_{\varphi\Box} + 0.014c_{qt}^8 + 0.014c_{\varphi t} - 0.013c_{tW} - 0.011c_{\varphi Q}^{(-)}$

**PC13 (2.76e+00):**  $+0.836c_{\varphi D} - 0.390c_{\varphi WB} - 0.286c_{\varphi W} - 0.151c_{\varphi\Box} - 0.130c_{\varphi B} + 0.112c_{c\varphi} - 0.070c_{\varphi Q}^3 + 0.055c_{WWW} - 0.047c_{b\varphi} + 0.044c_{\varphi Q}^{(-)} - 0.028c_{t\varphi} + 0.027c_{qq}^{8,3} - 0.022c_{qq}^{1,3} - 0.016c_{\varphi t} - 0.016c_{tZ} - 0.016c_{qq}^{1,8}$

**PC14 (1.83e+00):**  $+0.741c_{\varphi Q}^{(-)} - 0.483c_{\varphi t} + 0.287c_{ut}^8 + 0.221c_{qu}^8 - 0.178c_{qq}^{1,8} + 0.156c_{qq}^{8,3} + 0.127c_{dt}^8 + 0.068c_{qd}^8 - 0.051c_{t\varphi} + 0.047c_{\varphi\Box} - 0.047c_{qt}^8 - 0.034c_{\varphi D} + 0.026c_{\varphi Q}^3 + 0.017c_{\varphi WB} + 0.016c_{tZ} - 0.016c_{WWW} - 0.016c_{c\varphi} + 0.015c_{\varphi W} + 0.011c_{qq}^{1,3}$

**PC15 (6.57e-01):**  $-0.835c_{\varphi\Box} + 0.402c_{t\varphi} + 0.258c_{qq}^{8,3} + 0.131c_{qu}^8 - 0.108c_{\varphi D} - 0.105c_{qq}^{1,8} + 0.088c_{qd}^8 + 0.072c_{ut}^8 - 0.064c_{\varphi Q}^{(-)} + 0.057c_{dt}^8 + 0.051c_{c\varphi} + 0.050c_{\varphi W} - 0.048c_{WWW} + 0.048c_{\varphi WB} + 0.044c_{\varphi t} - 0.041c_{qt}^8 + 0.016c_{tG} + 0.014c_{\varphi B} + 0.011c_{tt}^1$

**PC16 (6.30e-01):**  $-0.679c_{qq}^{8,3} - 0.356c_{qu}^8 + 0.318c_{\varphi Q}^{(-)} - 0.267c_{\varphi\Box} + 0.236c_{qq}^{1,8} + 0.223c_{t\varphi} - 0.202c_{\varphi t} - 0.195c_{qd}^8 - 0.181c_{ut}^8 - 0.106c_{dt}^8 + 0.084c_{qt}^8 + 0.049c_{WWW} - 0.028c_{\varphi D} + 0.022c_{c\varphi} + 0.019c_{tG} - 0.016c_{\varphi Q}^3 + 0.012c_{\varphi WB}$

**PC17 (3.77e-01):**  $-0.729c_{WWW} + 0.377c_{qq}^{8,3} - 0.297c_{ut}^8 + 0.293c_{qt}^8 - 0.231c_{qu}^8 + 0.181c_{qq}^{1,8} - 0.153c_{dt}^8 + 0.139c_{\varphi Q}^{(-)} - 0.120c_{qd}^8 - 0.073c_{\varphi t} - 0.045c_{t\varphi} + 0.025c_{\varphi D} - 0.012c_{\varphi WB} + 0.012c_{tt}^1$

**PC18 (3.68e-01):**  $+0.678c_{WWW} + 0.472c_{qq}^{8,3} + 0.308c_{qt}^8 - 0.291c_{ut}^8 - 0.208c_{qu}^8 + 0.168c_{qq}^{1,8} - 0.152c_{dt}^8 + 0.124c_{\varphi Q}^{(-)} - 0.112c_{qd}^8 - 0.087c_{\varphi t} - 0.061c_{t\varphi} - 0.047c_{\varphi D} - 0.044c_{\varphi\Box} + 0.023c_{\varphi WB} + 0.023c_{\varphi W}$

**PC19 (1.94e-01):**  $-0.882c_{t\varphi} - 0.444c_{\varphi\Box} - 0.116c_{qq}^{8,3} - 0.073c_{\varphi D} + 0.049c_{\varphi W} - 0.037c_{tZ} + 0.033c_{\varphi WB} - 0.026c_{qt}^8 - 0.020c_{WWW} - 0.015c_{\varphi Q}^{(-)} + 0.014c_{ut}^8 - 0.012c_{qu}^8 - 0.011c_{qd}^8$

**PC20 (6.12e-02):**  $-0.737c_{tt}^1 - 0.423c_{Qt}^8 - 0.362c_{QQ}^1 + 0.216c_{qq}^{1,1} + 0.177c_{qt}^1 + 0.143c_{ut}^1 - 0.129c_{QQ}^8 + 0.112c_{qu}^1 + 0.072c_{dt}^1 + 0.063c_{qd}^1 + 0.059c_{qd}^8 + 0.048c_{dt}^8 + 0.036c_{\varphi t} - 0.036c_{ut}^8 + 0.034c_{\varphi Q}^{(-)} - 0.025c_{qu}^8 + 0.018c_{tZ} - 0.013c_{\varphi\Box} + 0.012c_{qq}^{8,3}$

**PC21 (2.60e-02):**  $-0.571c_{qd}^8 - 0.536c_{dt}^8 + 0.380c_{qu}^8 + 0.362c_{\varphi t} + 0.198c_{\varphi Q}^{(-)} + 0.197c_{ut}^8 + 0.150c_{tZ} + 0.062c_{qq}^{1,8} - 0.058c_{qt}^8 - 0.044c_{tt}^1 - 0.022c_{QQ}^1 + 0.018c_{qt}^1 - 0.018c_{\varphi\Box} - 0.015c_{Qt}^8 + 0.012c_{qu}^1$

**PC22 (2.35e-02):**  $-0.674c_{\varphi t} - 0.479c_{\varphi Q}^{(-)} - 0.354c_{qd}^8 - 0.271c_{tZ} + 0.216c_{ut}^8 - 0.211c_{dt}^8 + 0.082c_{qt}^8 - 0.072c_{tt}^1 - 0.070c_{qq}^{1,8} + 0.066c_{qu}^8 - 0.035c_{QQ}^1 + 0.030c_{qt}^1 - 0.024c_{Qt}^8 + 0.024c_{t\varphi} + 0.019c_{qu}^1 - 0.015c_{\varphi B} - 0.014c_{WWW} + 0.011c_{qd}^1$

**PC23 (7.57e-03):**  $+0.566c_{ut}^8 - 0.533c_{qu}^8 + 0.413c_{qt}^8 - 0.404c_{qq}^{1,8} + 0.232c_{\varphi t} - 0.083c_{qd}^8 + 0.036c_{tZ} + 0.025c_{\varphi Q}^{(-)}$

**PC24 (3.54e-03):**  $-0.482c_{QQ}^8 - 0.462c_{qt}^1 - 0.401c_{Qt}^8 + 0.344c_{qq}^{1,1} - 0.296c_{qu}^1 + 0.239c_{tt}^1 + 0.213c_{ut}^1 - 0.173c_{qd}^1 + 0.129c_{dt}^1 + 0.111c_{QQ}^1 - 0.104c_{qd}^8 + 0.080c_{dt}^8 - 0.075c_{Qt}^1 + 0.038c_{tZ} + 0.025c_{qu}^8 - 0.019c_{\varphi Q}^{(-)} - 0.017c_{\varphi t} - 0.013c_{ut}^8 + 0.013c_{qt}^8 - 0.013c_{qq}^{1,8}$

**PC25 (2.61e-03):**  $-0.707c_{dt}^8 + 0.615c_{qd}^8 + 0.177c_{tZ} + 0.168c_{ut}^8 - 0.130c_{\varphi t} - 0.110c_{qu}^8 - 0.095c_{qt}^8 + 0.090c_{qq}^{1,8} - 0.059c_{QQ}^8 - 0.055c_{qt}^1 - 0.050c_{Qt}^8 + 0.042c_{qq}^{1,1} - 0.037c_{\varphi Q}^{(-)} - 0.035c_{qu}^1 + 0.026c_{tt}^1 + 0.026c_{ut}^1 - 0.021c_{qd}^1 + 0.016c_{dt}^1 + 0.012c_{QQ}^1 - 0.011c_{qq}^{8,3}$

**PC26 (2.10e-03):**  $-0.930c_{tZ} + 0.229c_{\varphi t} + 0.182c_{\varphi Q}^{(-)} - 0.155c_{dt}^8 + 0.121c_{qd}^8 - 0.041c_{\varphi B} - 0.034c_{QQ}^8 - 0.033c_{qt}^8 - 0.032c_{qt}^1 + 0.030c_{qq}^{1,8} + 0.030c_{t\varphi} - 0.029c_{Qt}^8 + 0.025c_{qq}^{1,1} - 0.024c_{\varphi D} + 0.022c_{ut}^8 - 0.020c_{qu}^1 + 0.016c_{\varphi\Box} + 0.015c_{ut}^1 + 0.014c_{tt}^1 - 0.012c_{qd}^1 - 0.011c_{\varphi W} + 0.011c_{\varphi WB}$

**PC27 (1.06e-10):**  $+0.912c_{qq}^{1,1} + 0.255c_{Qt}^8 + 0.215c_{QQ}^8 + 0.135c_{qt}^1 - 0.116c_{ut}^1 + 0.087c_{qu}^1 + 0.084c_{tt}^1 - 0.067c_{dt}^1 + 0.051c_{qd}^1 + 0.044c_{QQ}^1 + 0.028c_{Qt}^1$

**PC28 (5.27e-11):**  $+0.986c_{dt}^1 + 0.107c_{Qt}^8 + 0.097c_{QQ}^8 - 0.049c_{ut}^1 + 0.040c_{qu}^1 + 0.033c_{qt}^1 + 0.031c_{qd}^1 + 0.020c_{tt}^1 + 0.013c_{Qt}^1 + 0.011c_{QQ}^1$

**PC29 (5.27e-11):**  $-0.843c_{qt}^1 - 0.297c_{tt}^1 + 0.297c_{QQ}^8 + 0.189c_{Qt}^8 + 0.184c_{qu}^1 - 0.143c_{QQ}^1 - 0.136c_{ut}^1 + 0.052c_{Qt}^1 - 0.040c_{qd}^1 - 0.028c_{dt}^1$

**PC30 (5.27e-11):**  $-0.969c_{qd}^1 + 0.193c_{qu}^1 + 0.132c_{qt}^1 + 0.050c_{QQ}^8 - 0.040c_{tt}^1 + 0.037c_{Qt}^8 - 0.022c_{QQ}^1 + 0.010c_{dt}^1$

**PC31 (5.27e-11):**  $+0.892c_{qu}^1 - 0.282c_{QQ}^8 + 0.235c_{tt}^1 - 0.187c_{Qt}^8 + 0.137c_{qd}^1 + 0.094c_{QQ}^1 - 0.063c_{ut}^1 - 0.044c_{qt}^1 - 0.040c_{Qt}^1$

**PC32 (5.27e-11):**  $+0.923c_{ut}^1 + 0.273c_{Qt}^8 - 0.159c_{QQ}^1 + 0.141c_{qu}^1 + 0.107c_{QQ}^8 + 0.100c_{tt}^1 + 0.059c_{Qt}^1 + 0.043c_{qd}^1 - 0.026c_{qt}^1$

**PC33 (5.27e-11):**  $+0.799c_{QQ}^1 + 0.383c_{QQ}^8 - 0.281c_{Qt}^8 - 0.253c_{tt}^1 + 0.206c_{ut}^1 - 0.166c_{Qt}^1 + 0.050c_{qu}^1$

**PC34 (5.27e-11):**  $-0.847c_{Qt}^1 - 0.326c_{QQ}^1 + 0.313c_{QQ}^8 + 0.206c_{tt}^1 - 0.188c_{Qt}^8$

**PC35 (5.27e-11):**  $-0.564c_{Qt}^8 + 0.515c_{QQ}^8 + 0.490c_{Qt}^1 + 0.351c_{tt}^1 - 0.232c_{QQ}^1$