

m - point peronon ezi
 m - mürji asympototik

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ah $m > m$

$$F_{1s}^N(t) = F_0 \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} + \sum_{k=m+1}^{\infty} \left\{ \sum_{i=1}^m \frac{m_k^2}{(m_k^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_k^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_k^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_k$$

$m = 2$

$n = \omega, \phi, \omega', \phi', \omega'', \phi''$

$$\Rightarrow F_{1s}^N(t) = \frac{1}{2} \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} + \left\{ \sum_{i=1}^m \frac{m_{\omega'}^2}{(m_{\omega'}^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\omega'}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\omega'}^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_{\omega'} +$$

$$+ \left\{ \sum_{i=1}^m \frac{m_{\phi'}^2}{(m_{\phi'}^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\phi'}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\phi'}^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_{\phi'} +$$

$$+ \left\{ \sum_{i=1}^m \frac{m_{\omega''}^2}{(m_{\omega''}^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\omega''}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\omega''}^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_{\omega''} +$$

$$+ \left\{ \sum_{i=1}^m \frac{m_{\phi''}^2}{(m_{\phi''}^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\phi''}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\phi''}^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_{\phi''}$$

$$F_{1s}^N(t) = \frac{1}{2} \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} +$$

$$+ \left\{ \frac{m_{\omega'}^2 m_{\phi}^2}{(m_{\omega'}^2 - t)(m_{\phi}^2 - t)} \frac{(m_{\phi}^2 - m_{\omega'}^2)}{(m_{\phi}^2 - m_{\omega'}^2)} + \frac{m_{\omega}^2 m_{\omega'}^2}{(m_{\omega}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\omega'}^2 - m_{\omega}^2)}{(m_{\omega'}^2 - m_{\omega}^2)} - \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} \right\} (f_{\omega'NN}^{(1)} / f_{\omega})$$

$$+ \left\{ \frac{m_{\phi'}^2 m_{\phi}^2}{(m_{\phi'}^2 - t)(m_{\phi}^2 - t)} \frac{(m_{\phi}^2 - m_{\phi'}^2)}{(m_{\phi}^2 - m_{\phi'}^2)} + \frac{m_{\phi}^2 m_{\omega}^2}{(m_{\phi}^2 - t)(m_{\omega}^2 - t)} \frac{(m_{\omega}^2 - m_{\phi}^2)}{(m_{\omega}^2 - m_{\phi}^2)} - \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} \right\} (f_{\phi'NN}^{(1)} / f_{\phi})$$

$$+ \left\{ \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} \frac{(m_{\phi}^2 - m_{\omega}^2)}{(m_{\phi}^2 - m_{\omega}^2)} + \frac{m_{\omega}^2 m_{\omega''}^2}{(m_{\omega}^2 - t)(m_{\omega''}^2 - t)} \frac{(m_{\omega''}^2 - m_{\omega}^2)}{(m_{\omega''}^2 - m_{\omega}^2)} - \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} \right\} (f_{\omega NN}^{(1)} / f_{\omega})$$

$$+ \left\{ \frac{m_{\phi}^2 m_{\phi}^2}{(m_{\phi}^2 - t)(m_{\phi}^2 - t)} \frac{(m_{\phi}^2 - m_{\phi}^2)}{(m_{\phi}^2 - m_{\phi}^2)} + \frac{m_{\phi}^2 m_{\omega''}^2}{(m_{\phi}^2 - t)(m_{\omega''}^2 - t)} \frac{(m_{\omega''}^2 - m_{\phi}^2)}{(m_{\omega''}^2 - m_{\phi}^2)} - \frac{m_{\omega}^2 m_{\phi}^2}{(m_{\omega}^2 - t)(m_{\phi}^2 - t)} \right\} (f_{\phi NN}^{(1)} / f_{\phi})$$

n - point resonanci

m - vrčuji asympotični

ak $n > m$

$$\Rightarrow F_{1V}^N(t) = F_0 \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} + \sum_{k=m+1}^n \left\{ \sum_{i=1}^m \frac{m_k^2}{(m_k^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_k^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_k^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_k$$

$m = 2$

$m = \rho'' \rho' \rho$

$$\Rightarrow F_{1V}^N(t) = \frac{1}{2} \frac{m_{\rho''}^2 m_{\rho'}^2}{(m_{\rho''}^2 - t)(m_{\rho'}^2 - t)} + \left\{ \sum_{i=1}^m \frac{m_{\rho}^2}{(m_{\rho}^2 - t)} \frac{\prod_{j=1, j \neq i}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\rho}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\rho}^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} \left(\frac{\rho^{(1)}}{\rho_{NN} \rho} \right)$$

$$F_{1V}^N(t) = \frac{1}{2} \frac{m_{\rho''}^2 m_{\rho'}^2}{(m_{\rho''}^2 - t)(m_{\rho'}^2 - t)} +$$

$$+ \left\{ \frac{m_{\rho}^2 m_{\rho'}^2}{(m_{\rho}^2 - t)(m_{\rho'}^2 - t)} \frac{(m_{\rho'}^2 - m_{\rho}^2)}{(m_{\rho'}^2 - m_{\rho''}^2)} + \frac{m_{\rho}^2 m_{\rho''}^2}{(m_{\rho}^2 - t)(m_{\rho''}^2 - t)} \frac{(m_{\rho''}^2 - m_{\rho}^2)}{(m_{\rho''}^2 - m_{\rho'}^2)} - \frac{m_{\rho}^2 m_{\rho'}^2}{(m_{\rho}^2 - t)(m_{\rho'}^2 - t)} \right\} \left(\frac{\rho^{(1)}}{\rho_{NN} \rho} \right)$$

n -polet resonanci
 m -mreži asimptotiku

Ali $m > n$

$$\Rightarrow F_{2s}^N(t) = F_0 \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} + \sum_{k=m+1}^n \left\{ \sum_{i=1}^m \frac{m_k^2}{(m_k^2 - t)} \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_k^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_k^2)} - \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1}^m (m_j^2 - t)} \right\} a_k$$

$m=3$

$n = \omega'', \phi'', \omega', \phi', \omega, \phi$

$$\begin{aligned} \Rightarrow F_{2s}^N(t) = & \frac{1}{2} (\mu_p + \mu_n - 1) \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} + \\ & + \left\{ \sum_{i=1}^m \frac{m_{\phi'}^2}{(m_{\phi'}^2 - t)} \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\phi'}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\phi'}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\phi'NN}^{(2)} / f_{\phi'}) + \\ & + \left\{ \sum_{i=1}^m \frac{m_{\omega}^2}{(m_{\omega}^2 - t)} \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\omega}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\omega}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\omega NN}^{(2)} / f_{\omega}) + \\ & + \left\{ \sum_{i=1}^m \frac{m_{\phi}^2}{(m_{\phi}^2 - t)} \frac{\prod_{j=1}^m m_j^2}{\prod_{j=1, j \neq i}^m (m_j^2 - t)} \frac{\prod_{j=1}^m (m_j^2 - m_{\phi}^2)}{\prod_{j=1, j \neq i}^m (m_j^2 - m_{\phi}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\phi NN}^{(2)} / f_{\phi}) \end{aligned}$$

$$\begin{aligned} F_{2s}^N(t) = & \frac{1}{2} (\mu_p + \mu_n - 1) \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} + \\ & + \left\{ \frac{m_{\phi'}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\phi'}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\phi''}^2 - m_{\phi'}^2)(m_{\omega'}^2 - m_{\phi'}^2)}{(m_{\phi''}^2 - m_{\omega''}^2)(m_{\omega'}^2 - m_{\omega''}^2)} + \frac{m_{\phi'}^2 m_{\omega''}^2 m_{\omega'}^2}{(m_{\phi'}^2 - t)(m_{\omega''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\omega''}^2 - m_{\phi'}^2)(m_{\omega'}^2 - m_{\phi'}^2)}{(m_{\omega''}^2 - m_{\phi''}^2)(m_{\omega'}^2 - m_{\phi''}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\phi'NN}^{(2)} / f_{\phi'}) + \\ & + \left\{ \frac{m_{\omega}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\phi''}^2 - m_{\omega}^2)(m_{\omega'}^2 - m_{\omega}^2)}{(m_{\phi''}^2 - m_{\omega''}^2)(m_{\omega'}^2 - m_{\omega''}^2)} + \frac{m_{\omega}^2 m_{\omega''}^2 m_{\omega'}^2}{(m_{\omega}^2 - t)(m_{\omega''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\omega''}^2 - m_{\omega}^2)(m_{\omega'}^2 - m_{\omega}^2)}{(m_{\omega''}^2 - m_{\phi''}^2)(m_{\omega'}^2 - m_{\phi''}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\omega NN}^{(2)} / f_{\omega}) + \\ & + \left\{ \frac{m_{\phi}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\phi}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\phi''}^2 - m_{\phi}^2)(m_{\omega'}^2 - m_{\phi}^2)}{(m_{\phi''}^2 - m_{\omega''}^2)(m_{\omega'}^2 - m_{\omega''}^2)} + \frac{m_{\phi}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\phi}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \frac{(m_{\omega''}^2 - m_{\phi}^2)(m_{\omega'}^2 - m_{\phi}^2)}{(m_{\omega''}^2 - m_{\phi''}^2)(m_{\omega'}^2 - m_{\phi''}^2)} - \frac{m_{\omega''}^2 m_{\phi''}^2 m_{\omega'}^2}{(m_{\omega''}^2 - t)(m_{\phi''}^2 - t)(m_{\omega'}^2 - t)} \right\} (f_{\phi NN}^{(2)} / f_{\phi}) \end{aligned}$$

m -počet rezonancií
 m -vrstvi asymptotiku

Alk $n=m=3$

$n=p''p'p$

$$\Rightarrow \overline{F}_{2V}^N(t) = \frac{1}{2} (\mu_p - \mu_n - 1) \frac{m_{p''}^2 m_{p'}^2 m_p^2}{(m_{p''}^2 - t)(m_{p'}^2 - t)(m_p^2 - t)}$$