Apply the sum fla to $h_t(\nu)$ and estimate the r.h.s. Get

$$- \delta(h_t) = i2A \int_0^\infty e^{-ty^2}\left(1 + O(e^{-2\pi y})\right) p(iy) y \, dy$$

$$= \cdots = A\ell! \, t^{-\ell-1} + O(t^{-\ell}) \quad t \downarrow 0.$$

In the Kloost. term move $\int$ to $\mathrm{Re}\,\nu = \sigma$, get

$$- O(t^{-\ell-1/2}) \, a^{\rho+\sigma}$$

Put $t = X^{-2}$ get

<u>**Proposition**</u> $$\int_{i[0,X]} \frac{|\nu|^{2\ell}}{\cos \pi\nu} \, d\sigma(\nu) = O(X^{2\ell+2}) \quad X \to +\infty$$

With this information can estimate $\int h_x(\nu) \, d\sigma(\nu)$. One does not get a new contribution. Have

<u>**Theorem**</u>. If Ψ_x is a smooth approximation of $\chi_{[x,2x]}$, as above, then, as $x \downarrow 0$

$$\sum_{\gamma \in \mathcal{P} \backslash \Gamma} a_\gamma^\rho \, S(\gamma) \, \Psi_x(a_\gamma^\alpha) = \sum_{\nu_j \in \mathcal{E}} \sigma_{\nu_j} \frac{M\Psi(-\nu_j)}{g(\nu_j)} x^{-\nu_j} + O\left(Y^{X+1} + x^{1-\sigma} + |\log x|\right)$$

<u>Note</u>. $\exists$ cancellation, trivial estimate gives $x^{-\sigma}$.