Laplace transforms

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I should study distributions by means of their Laplace transforms!

$x\mathcal{C}\ \partial y$
$x\mathcal{C}\ \partial z$
∂y
$x\mathcal{C}\ \partial z$

Problem.

Compute $\partial_i := \frac{\partial}{\partial \xi_i}$

$$P(\partial_i)\, e^{\sum a_{ij}\partial_i\partial_j}\, e^{\sum b_{\alpha\beta}\{\alpha\}_i\{\beta\}_j t + x_i\}_j + \epsilon x_k\}_i\}_j\}_k}$$

τ_i: only linear changes of variable.

α_i: Appear only linearly in $\mathcal{Z}$, w/ t_i coeffs

ξ_i: At $\epsilon=0$, appear at most quadratically in $\mathcal{Z}$ & Φ

In $\mathcal{Z}$: $\deg t_i = 0$, $\deg x_i = 1$, $\deg a_i = 2$ — at $\epsilon=0$, $\mathcal{Z}$ is of degree at most 2.

In Φ: At $\epsilon=0$, Φ preserves degrees, w/

$\deg \tau_i = 2$
$\deg \xi_i = 1$
$\deg \alpha_i = 0$

0

$$\Phi : \mathbb{R}^{m_1+n_1+p_1}_{\alpha_i,\xi_i,\tau_i} \longrightarrow \mathbb{R}^{m_2+n_2+p_2}_{\beta_j,\eta_j,\sigma_j}$$

$$Z\in\mathbb{Q}[[a_i,\xi_i,\tau_i;D$$

$$Z\left(\frac{\partial}{\partial\alpha_i},\frac{\partial}{\partial\xi_i},\frac{\partial}{\partial\tau_i}\right)e^{\sum b_j\Phi^*(\beta_j)+\sum y_j\Phi^*(\eta_j)+\sum s_j\Phi^*(\sigma_j)}$$