CORRECTIONS

1. Correction to the section 19.3, page 98, lines 2 and 3

Delete: "after $\frac{N}{2}$ integrations by parts".

Add: "The remainder $r_1(\lambda, y)$ has the form $r_1(\lambda, y) = P(\lambda, y)e^{i\lambda r_2(y)}$, where

$$r_2(y) = O(|y|^3),\ \big|\frac{\partial^k}{\partial y^k}P(\lambda, y)\big| \le C_k(1+|\lambda|)^{\frac{N}{3}}|y|^{N-|k|},\ 0 \le |k| \le N.$$

Let $\psi(y) = \frac{1}{2}\sum\limits_{j=1}^{n}\alpha_j y_j^2 + r_2(y)$. Note that

$$\sum_{j=1}^{n}\big(\frac{\partial\psi}{\partial y_j}\big)^2 = \sum_{j=1}^{n}\alpha_j^2 y_j^2 + O(|y|^3) \ge C|y|^2,$$

assuming that $\operatorname{supp}\chi(y)$ is small. Using the identity (19.17) with $\varphi(x)$ replaced by $\psi(y)$ and integrating by parts $\frac{N}{2}$ times, we get that the contribution of $r_1(\lambda, y)$ will be $O(\lambda^{\frac{N}{3}-\frac{N}{2}})$."

2. Corrections to the section 63, page 341

Replace the lines 8–26 on the page 341 by the following:

Let

$$I_3(\eta) = \int_{\mathbb{R}^n} e^{-iy\cdot\eta}\chi\big(\frac{y-S_\eta}{\delta}\big)\beta_0(\eta)\psi_0(y)u(y)dy.$$

Representing $\chi\big(\frac{y-S_\eta}{\delta}\big)$ as $1 + \big(\chi\big(\frac{y-S_\eta}{\delta}\big) - 1\big)$ we get the decompositions

$$I_3(\eta) = I_{31}(\eta) + I_{32}(\eta) \quad \text{and} \quad I_1(\xi) = I_{11}(\xi) + I_{12}(\xi),$$

respectively.

Note that $I_{31}(\eta) = \beta_0(\eta)\widetilde{\psi_0(y)u(y)}$ where $\widetilde{\psi_0(y)u(y)}$ is the Fourier transform of $\psi_0(y)u(y)$. Since $\operatorname{supp}(\psi_0(y)\beta_0(\eta)) \cap WFu = \emptyset$, we get

$$|I_{31}(\eta)| \le C_N(1+|\eta|)^{-N}, \quad \forall N. \tag{63.7}$$

We have

$$e^{-ix\cdot\xi} = \frac{(-\Delta_x + 1)^N e^{-ix\cdot\xi}}{(1+|\xi|^2)^N}, \quad \forall N.$$

Integrate by parts in $I_{11}(\xi)$ with respect to x. Using (63.7) we get

$$|I_{11}(\xi)| \le C_N(1+|\xi|)^{-N}, \quad \forall N.$$

In $I_{12}(\xi)$ we integrate by parts in η using (63.1). Thus also $|I_{12}(\xi)| \le C_N(1+|\xi|)^{-N}$, $\forall N$. Therefore, $(x_0, \xi_0) \notin WF(\Phi u)$. $\square$