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

$$r_2(y) = O(|y|^3), \quad \left| \frac{\partial^k}{\partial y^k} P(\lambda, y) \right| \leq C_k (1 + |\lambda|) \frac{N}{2} |y|^{|\lambda|-k}, \quad 0 \leq |k| \leq N.$$  

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

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

assuming that 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 $O(\lambda \frac{N}{2} - \frac{N}{2})$.”

2. Corrections to the section 63, page 341

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

Let

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

Representing $\chi(\frac{y-Su}{\delta})$ as $1 + (\chi(\frac{y-Su}{\delta}) - 1)$ 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 supp $(\psi_0(y) \beta_0(\eta)) \cap WF u = \emptyset$, we get

$$|I_{31}(\eta)| \leq C_N (1 + |\eta|)^{-\frac{N}{2}}, \quad \forall N.$$
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
\[ |I_{11}(\xi)| \leq C_N(1 + |\xi|)^{-N}, \quad \forall N. \]
In \( I_{12}(\xi) \) we integrate by parts in \( \eta \) using (63.1). Thus also \( |I_{12}(\xi)| \leq C_N(1 + |\xi|)^{-N}, \quad \forall N. \) Therefore, \( (x_0, \xi_0) \not\in WF(\Phi u) \). \( \square \)