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Correction to: On Regular Fréchet-Lie Groups I

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The paper with the above title contains the misprints and an omission. The omisson occurs in Lemma 3.5.

The correction in the statement of Lemma 3.5 is: Page 380 in Lemma 3.5: Φ_2 in the statement and the proof should be understood as a mapping involving X_1-variable, i.e., $\Phi_2(x;\xi)$ should be replaced by $\Phi_2(x; X_1, \xi)$.

By the above reason, the proof of Proposition 4.1 is not correct, for $b_2(x;\tilde{\xi})$ in (53) contains X_1-variable. This gap is repaired as follows: Denote $\phi(x;\tilde{\xi}, X_1)=\langle\tilde{\xi}|\tilde{S}(x; X_1, \bar{X}_0(x;\xi(x;\tilde{\xi})))\rangle$, and set

$$\psi(x;\tilde{\xi}, Y, \zeta, X_1)=\langle\zeta|Y\rangle+\phi(x;\tilde{\xi}+\zeta, X_1)-\phi(x;\tilde{\xi}, X_1)$$
$$=\left\langle\zeta\,\middle|\, Y+\int_0^1\frac{\partial\phi}{\partial\tilde{\xi}}(x;\tilde{\xi}+t\zeta, X_1)dt\right\rangle .$$

Note that if $\varphi=\mathrm{id.}$, then $\phi=\langle\tilde{\xi}|X_1\rangle$, hence $\psi=\langle\zeta|Y+X_1\rangle$. Therefore, one may assume that $\int_0^1\partial\phi/\partial\tilde{\xi}(x;\tilde{\xi}+t\zeta, X_1)dt$ is sufficiently close to X_1 in the C^2-topology.

By Lemma 3.5, the given operator can be written by

$$(1)\qquad \iint a(x;\tilde{\xi}, X_1)e^{-i\phi(x;\tilde{\xi},X_1)}\nu_1(x, z)u(z)dz d\tilde{\xi},\quad z=\cdot_x X_1 ,$$

where ν_1 is the cut off function defined in (46). (Cf. (34)~(40)). Since the breadth of ν_1 is sufficiently small, one may assume $\phi(x;\tilde{\xi}, X_1)\equiv\langle\tilde{\xi}|X_1\rangle$ for $|X_1|>>0$. For amplitude $a\in\tilde{\Sigma}_C^\beta$ we consider the following equation:

$$(2)\qquad a(x;\tilde{\xi}, X_1)=\iint e^{-i\psi(x;\tilde{\xi},Y,\zeta,X_1)}b(x;\tilde{\xi}, Y)dY d\zeta\ ,$$

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