p. 2. Delete the last sentence of exercise 5.

p. 3 line 3 replace $U_{p,\varepsilon}$ with $U_{p_1,\varepsilon_1} \cap U_{p_1,\varepsilon_1} \cap \cdots \cap U_{p_1,\varepsilon_1}$ with $p_1, ..., p_r \in \mathcal{S}$ and $\varepsilon_i > 0$

p. 8 In the statement of Theorem 38, Separable should be interpreted as Hausdorff.

p. 15 replace the statement and proof of Lemma 49 with

Lemma 49 *p is a continuous seminorm on V if and only if there exists a constant A and elements $p_1, ..., p_r \in S$ such that*

$$p(v) \leq A \sum p_i(v), v \in V.$$

Proof. Let $U = \{v \in V | p(v) < 1\}$. Then since p is continuous there exist $p_1, ..., p_r \in \mathcal{S}$ and $\varepsilon_i > 0, = 1, ..., r$ such that

$$U_{p_1,\varepsilon_1} \cap U_{p_1,\varepsilon_1} \cap \cdots \cap U_{p_1,\varepsilon_1} \subset U.$$

Let $0 < \delta < \min\{\varepsilon_1, ..., \varepsilon_r\}$. Let $v \in V$ and assume that $T = \{i | p_i(v) \neq 0\} \neq \emptyset$. Let $b = \max\{p_i(v) | i \in T\}$. Then if $i \in T$ then

$$p_i(\frac{\delta}{b} v) \leq \delta < \varepsilon.$$

If $i \notin T$ then $p_i(v) = 0$ so the above inequality is true for all i. If $T = \emptyset$ then $zv \in U_{p_1,\varepsilon_1} \cap U_{p_1,\varepsilon_1} \cap \cdots \cap U_{p_1,\varepsilon_1}$ for all $z \in \mathbb{C}$ and thus

$$p(zv) < 1$$

for all $z \in \mathbb{C}$ and this implies that $p(v) = 0$. This implies that for all $v \in V$,

$$p(v) \leq \frac{1}{\delta} \max\{p_i(v)\} \leq \frac{1}{\delta} \sum p_i(v).$$

The converse is obvious.

Replace Definition 51 with:

Definition 51. *Let V and W be locally convex spaces as above. Then the strong operator topology on $L(V, W)$ has as a basis of open neighborhoods of 0 the sets $N(A, B) = \{T \in L(V, W) | TA \subset B\}$ where B is an open absorbing neighborhood of 0 in W and and A is a bounded subset of V.*

Here a set A is bounded if for each open neighborhood of 0, Z there exists $r > 0$ so that $rA \subset Z$.This topology is the weakest topology on $L(V, W)$ such that the map

$$L(V, W) \times V \to W$$

given by

$$T, v \longmapsto Tv$$

is continuous in the product topology.

p.18 In the statement of Lemma 64 there should have also been the statement: Given λ the set $\{i|\lambda_i = \lambda\}$ is finite.

In the proof of Lemma 58 we reduce to the case when $T = T^*$ tacitly assuming that if T is compact then so is T^*. This is true but not completely trivial. A standard proof uses the polar decomposition. We will describe a simple path to this result in our context (the polar decomposition is true for all bounded operators but we will only prove it here for compact operators). A *partial isometry* of H is a bounded operator $U : H \to H$ such that if $V = \ker U^{\perp}$ with $U_{|V}$ an isometry onto its image. That is, $\langle Uv, Uw \rangle = \langle v, w \rangle, v, w \in V$. If T is a compact operator then we define $|T|$ as follows $|T|_{|\ker T} = 0$ and if v_i, λ_i are as in Lemma 64 for the compact operator T^*T then $|T|v_i = \sqrt{\lambda_i} v_i$. (Notice that $\lambda_i > 0$.) Define U by $U_{|\ker T} = 0$ and $Uv_i = \frac{1}{\sqrt{\lambda_i}} T v_i$. Then $\langle Uv_i, Uv_j \rangle = \frac{1}{\sqrt{\lambda_i \lambda_j}} \langle Tv_i, Tv_j \rangle = \frac{1}{\sqrt{\lambda_i \lambda_j}} \langle T^*Tv_i, v_j \rangle = \frac{\lambda_i}{\sqrt{\lambda_i \lambda_j}} \langle v_i, v_j \rangle = \delta_{ij}$. Thus U is a partial isometry and $T = U|T|$. The condition $\lim_{n\to\infty} \lambda_i = 0$ and the finiteness assertion on the eigenspaces implies that $|T|$ is compact. But then $T^* = |T|U^*$ which is also compact.