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## Petrovsky condition for forward evolution and semigroups

About ten years ago suddenly I get infected by interest in theory of distributions, especially in rapidly decreasing distributions on  $\mathbb{R}^n$  whose set is denoted by  $O'_C(\mathbb{R}^n)$ . During these ten years I proved the following:

$$O'_C(\mathbb{R}^n) * S(\mathbb{R}^n) \subset L(S(\mathbb{R}^n), S(\mathbb{R}^n)),$$

so that  $O'_C(\mathbb{R}^n)$  can be equipped with topology  $op$  induced from  $L(S(\mathbb{R}^n), S(\mathbb{R}^n))_b$ . The locally convex space  $(O'_C(\mathbb{R}^n), op)$  is complete. The Fourier transformation yields an isomorphism of locally convex spaces  $(O'_C(\mathbb{R}^n), op)$  and  $O_M(\mathbb{R}^n)$  such that  $F(O'_C(\mathbb{R}^n) * S'(\mathbb{R}^n)) = F(O'_C(\mathbb{R}^n)) \bullet F(S'(\mathbb{R}^n))$ . Thanks to the fact that  $O_M(\mathbb{R}^n)$  is algebra of multipliers of  $S(\mathbb{R}^n)$  the last isomorphism implies at once that for  $(O'_C(\mathbb{R}^n), op)$  the fundamental Theorem XV from Chapter VII of the book of L.Schwartz is true. The topology  $\beta$  in  $O'_C(\mathbb{R}^n)$ , invented originally by L.Schwartz, is strictly finer than the topology  $op$ , so that  $(O'_C(\mathbb{R}^n), \beta)$  is not isomorphic with  $O_M(\mathbb{R}^n)$ . The aforementioned relation between the Petrovsky condition for forward evolution and one-parameter convolution semigroups (in  $O'_C(\mathbb{R}^n)$  and in  $S'(\mathbb{R}^n)$ ) has secondary importance, but agrees with scope of the conference.