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GENERATION OF EQUICONTINUOUS SEMIGROUPS BY HERMITIAN AND SECTORIAL OPERATORS. I

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1. **Introduction.** This announcement and its sequel [8] conclude a series, beginning with [6] and [7], in which classical Banach-algebraic techniques are adapted to treat problems in operator theory on a general locally convex space (lcs). These announcements provide a representative sampling of the results which will appear, with full proofs and examples, in [9].

The material discussed below is concerned with the more geometrical aspects of the generation and perturbation theory of continuous (and/or holomorphic) semigroups of operators on an lcs. It unifies and extends several earlier lines of development: the Hille-Yosida generation theory and Phillips perturbation theory for C_0 semigroups on B-spaces [1], the norm-estimate theory of holomorphic semigroups on B-spaces developed by Hille and Phillips [1], and the geometric theory of hermitian (selfadjoint) and sectorial generators of unitary groups and holomorphic semigroups respectively (due respectively to Stone [10] and Kato [2] for Hilbert spaces, and to Lumer-Phillips [3] and the author [5] for B-spaces). Applications are illustrated in §5 in the nonclassical setting of various differential operators and evolution equations on test function spaces.

The setting of the present announcement is that of a "calibrated" lcs $\mathfrak{X}$ with a "Lumer geometry" as described in [6] and [7]. By contrast, [8] is concerned with the more topological aspects of the theory, relating earlier work of Schwartz, Yosida, and Komatsu (see [11]) and the theory of "distribution semigroups" to the results discussed below. A primitive version of some of this material was sketched in [5], and references 6 and 7 cited there have been absorbed into the monograph [9].

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