

The spectral property of eventually norm continuous semigroups given in Theorem 1.20 is contained in Hille-Phillips (1957) (Thm.16.4.2) with a proof depending on Gelfand theory. For norm continuous semigroups it is contained in Pazy (1983) with a simpler proof. The elementary proof we give here is due to G. Greiner.

Theorem 1.29 on the perturbation by bounded operators is due to Phillips (1953) who also investigated permanence of smoothness properties by this kind of perturbation. We also refer to Pazy (1983) (Sec.3.1).

The observation that eventually norm continuity is preserved by perturbation by a compact operator (see Thm.1.30) seems to be new.

The perturbation by continuous operators on the graph of the generator is due to Desch-Schappacher (1984). The short proof we give here is due to G. Greiner and has the advantage to yield the same permanence for smoothness properties as in the classical case (Cor.1.32).

The characterization of a core as "domain of uniqueness" (Thm.1.33) seems to be new. In this section we have presented part of the standard theory of one-parameter semigroups including some new aspects. A very elegant brief introduction to one-parameter semigroups is given in the treatise of Kato (1966) where one can also find all the results on perturbation theory going beyond the elementary facts we discuss here. A complete information on the general theory can be obtained by consulting the books of Davies (1980), Goldstein (1985a) and Pazy (1983). The monograph of Goldstein (1985a) in particular contains a variety of examples and applications.

Section 2. Dissipative operators were introduced by Lumer-Phillips (1961). The analogous notion of dispersiveness is due to Phillips (1962). Our approach follows closely Arendt-Chernoff-Kato (1982) where half-norms were introduced. Related previous results were obtained by Calvert (1971), Hasegawa (1966), Sato (1968), Bényilan-Picard (1979) and Picard (1972), where the two last consider non-linear semigroups. A further investigation of half-norms can be found in Batty-Robinson (1983) who consider ordered Banach spaces other than Banach lattices in great detail. We also refer to the historical notes given there.

Section 3. It had been proved by Kishimoto-Robinson (1981) that every generator of a ω -positive semigroup on L^∞ is bounded. That every strongly continuous semigroup on L^∞ is uniformly continuous was first shown by Lotz (1982), (1984), (1985). The proof of Lemma 3.1 was communicated to the author by T. Coulhon, who independently obtained a particular case (Coulhon (1984)).