to μ, and $\int x\,d\mu = \varphi(h_\mu)$, for every $\mu \in M_E$; (ii) there is a $\psi \in C''$ such that $\psi \upharpoonright E = \varphi \upharpoonright E$ and $\delta(\psi)(f) = 0$ for every $f \in E$; (iii) $\varphi \upharpoonright K_E$ is $\mathfrak{T}_s(C',C)$-continuous.

Let $Ra \subseteq C''$ be the set of those φ such that $u(|\varphi|)^*$ is zero except on a meagre set. Then Ra is a norm-closed solid linear subspace of C''; its polar in C' is precisely $C^\times$. (Note that $C^\times = \{0\}$ in many of the most important elementary cases.) The quotient C''/Ra is an M-space with unit; let $\tilde{C}$ be the image of $\hat{C}$ in C''/Ra; because $\hat{C} \cap Ra = \{0\}$, $\tilde{C}$ is canonically isomorphic, as M-space, to $\hat{C}$ and C. The Riesz subspace $\mathscr{I}\tilde{C} \cap \mathscr{D}\tilde{C}$ of C''/Ra is Dedekind complete, so can be identified with the Dedekind completion of C.

I have not mentioned the multiplicative structure of C. But this is implicit in the Riesz space structure; every M-space with unit has a canonical multiplicative structure, and uniferent Riesz homomorphisms between such spaces are multiplicative. Thus there are multiplications on C'' and C''/Ra which are consistent with the natural multiplications on C and U.

From what I have written it should be clear that the structure (C, C'') is a happy hunting ground for anyone who enjoys multifaceted phenomena. I should like to conclude by remarking on three of the lines of enquiry suggested by this book. (a) Is there any sense in which we can say that U is the largest subspace of $\ell^\infty(X)$ which can be naturally identified with a subspace of $C''(X)$? It may be necessary to use concepts from mathematical logic to explain what "naturally identify" can properly mean. (b) The space X can be retrieved, up to homeomorphism, from the Riesz space C, and the L-space C' can be found from C'', being identifiable as $(C'')^\times$. But widely varying spaces X can give rise to identical C' spaces. Maharam's theorem gives a simple complete classification of L-spaces in terms of densities of principal bands; is there an easy way to pick out the C' spaces from this classification, and to what extent can we derive topological properties of X from the properties of C'? (c) Because C'' is an M-space with unit, it can be identified with $C(Z)$ for an essentially unique compact Hausdorff space Z, and the embedding of C in C'' corresponds to a continuous surjection $q\colon Z \to X$. Is there a useful direct topological construction of (Z, q) from X? Which aspects of the structure (C, C'') can be effectively developed in terms of the triple (X, Z, q)?

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Methods of bifurcation theory, by Shui-Nee Chow and Jack K. Hale, A Series of Comprehensive Studies in Mathematics, vol. 251, Springer-Verlag, New York, 1982, xv + 515 pp., $48.00. ISBN 0-387-90664-9

The book under review is a major treatise on analytical methods in bifurcation theory. The theory is developed in the context of a large variety of