well known and need not be explained further. Another natural and important structure of $C_o(X)$ is the pointwise ordering, under which $C_o(X,\mathbb{R})$ is a (real) Banach lattice and $C_o(X,\mathbb{C})$ a complex Banach lattice in the sense explained in Chapter C-I. Concerning the order structure of $C_o(X)$ we use the following notations: For a function f in $C_o(X,\mathbb{R})$

- $f \geq 0$ means $f(t) \geq 0$ for all $t \in X$ (f is then called <u>positive</u>),
- $f > 0$ means that f is positive but does not vanish identically,
- $f \gg 0$ means that $f(t) > 0$ for all t in X (f is then called <u>strictly positive</u>).

The notion of an order ideal explained in Chapter C-I applies of course to the Banach lattices $C_o(X)$ and might give rise to confusion with the corresponding algebraic notion. However, since we are mainly considering closed ideals and since a closed linear subspace I of $C_o(X)$ is a lattice ideal if and only if I is an algebraic ideal, we may and will simply speak of <u>closed ideals</u> without specifying whether we think of the algebraic or the order theoretic meaning of this word. An important and frequently used characterization of these objects is the following: A subspace I of $C_o(X)$ is a closed ideal if and only if there exists a closed subset A of X such that a function f belongs to I if and only if f vanishes on A . A is of course uniquely determined by I and is called the <u>support</u> of I . If $I = I_A$ is a closed ideal with support A then I_A is naturally isomorphic to $C_o(X\setminus A)$ and the quotient $C_o(X)/_I$ is (under the natural quotient structure) again a Banach algebra and a Banach lattice that can be identified canonically (via the map $f + I \to f_{|A}$) with $C_o(A)$.

2. <u>LINEAR FORMS AND DUALITY</u>

The Riesz Representation Theorem asserts that the dual of $C_o(X)$ can be identified in a natural way with the space of bounded regular Borel measures on X . While there is no natural algebra structure on this dual, the dual ordering (see C-I) makes $C_o(X)'$ into a Banach lattice. We will occasionally make use of the order structure of $C_o(X)'$ but since at least its measure theoretic interpretation is supposed to be well-known, it may suffice here to refer to Chapter C-I, Sections 3