ependent conditions on a linear system — of a configuration of points on an algebraic surface. Indeed, the second reciprocity formula deals with 0-dimensional schemes and not just points, and uses in an essential way the local and global duality theorems.

Finally we turn to a question, initiated by Schwartzenberger, of understanding the relation between points on a surface and rank-two vector bundles. This illustrates both the global duality theorem and original definition of "Ext" in terms of extensions. The end result is a generalization of the residue theorem to sections of vector bundles and subsequent interpretation of this as imposing necessary and sufficient Abel-type conditions on a configuration of points on a surface to be the zeros of a section of a rank-two vector bundles, perhaps helping to clarify those aspects of the fundamental correspondence between divisors and line bundles that will and will not generalize.

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1. Elementary Properties of Residues

Definition and Cohomological Interpretation

Let U be the ball $\{z \in \mathbb{C}^n \mid \|z\| < \varepsilon\}$ and $f_1, \dots, f_n \in \mathcal{O}(\bar{U})$ functions holomorphic in a nbd of the closure