

## LECTURE XV. SUMMARY

In these concluding remarks I shall summarize the basic ideas of this series of lectures and raise a few questions about possible future work. In particular I shall try to emphasize the desirability of carrying out this work at various levels of abstraction, especially the lowest and the highest.

I shall also make a few comments on the bibliography.

Let us recall the basic diagram, as it was presented in the fourteenth lecture:

$$(1) \quad \begin{array}{ccccc} \mathfrak{X} & \xrightarrow{T} & \mathfrak{X} & \xrightarrow{E} & \mathfrak{Y} \\ \alpha \uparrow & & \beta \uparrow & & \gamma \uparrow \\ \mathfrak{X}_0 & \xrightleftharpoons[U_0]{T_0} & \mathfrak{X}_0 & \xrightleftharpoons[l_0]{E_0} & \mathfrak{Y}_0 \end{array}$$

The linear mappings in this diagram are assumed to satisfy the following conditions:

$$(2) \quad E \circ T = 0$$

$$(3) \quad \gamma = E \circ \beta \circ l_0$$

$$(4) \quad I_{\mathfrak{X}_0} = l_0 \circ E_0 + T_0 \circ U_0.$$

From these assumptions we easily concluded that

$$(5) \quad E \circ \beta - \gamma \circ E_0 = E \circ (\beta \circ T_0 - T_0 \circ \alpha) \circ U_0.$$