Subject: یک سمینار تاریخی Date: / /

Cauchy 1857. ⟶ Gauss, Abel, Jacobi, Appel, Humbert, Riemann ≤1900 Abelian integrals $\int \frac{dx}{\sqrt{P(x)}}$

$\{(x,y)\in\mathbb{C}^2 \mid y^2=P(x)\} \overset{\deg P=3}{\simeq}$ (elliptic curve)

→ Topology (Riemann) ⟶ Poincaré (Analysis Situs) ~1900

→ Poincaré, Picard ~1900 multiple integrals $\int \frac{P(x,y)\,dx\,dy}{\sqrt{P(x,y)}}$.

Picard rank, Picard group in Algebraic Geometry

$\{(x,y,z)\in\mathbb{C}^3 \mid z^2=P(x,y)\} = ?$

→ S. Lefschetz 1924 Topology of algebraic varieties. ⟶ W. Hodge 1941 اثبات دقیق Hodge conjecture Clay. Math. Inst. 7 mil. conj.s

→ ≤1960, Griffiths, Grothendieck, Deligne Arithmetic Alge. Geometry. ↗ Grothendieck's theory of motives, Weil conjecture, P. Deligne Fields medal 1978

String Theory, ~1980, E Witten, Vafa, ... , mirror symmetry ↗ A-model — symplectic geometry. ↘ B-model — complex Geometry, Hodge theory.

→ Enormous amount of predictions, conjectures, mainly in Alg. Geometry — Gromov-Witten invariants, Clemens conjecture.

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