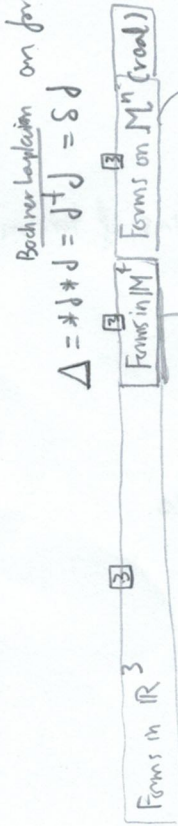


Types of Laplacian, with relation to forms

Bochner Laplacian on forms
 $\Delta = \delta \delta^* + \delta^* \delta$
 Lax-Ricci operator on forms
 $(= (\delta + \delta^*)^2 \text{ by } \delta^2 = 0 = \delta^2)$

... can imagine
 $\Delta = \delta \delta + \delta \delta$
 for vector of δ, δ
 Curr to other cohomology, homology pairs.



□ d'Alembertian in place of Δ

flat or/through an/linear
 $\Delta = \nabla \cdot \nabla = \frac{1}{J} \frac{\partial}{\partial q_i} \left(\frac{J}{h_i^2} \frac{\partial}{\partial q_i} \right)$
 acting on scalars
 $\Delta A = \nabla \cdot (\nabla \cdot A) - \nabla \times (\nabla \times A)$
 Laplacian acting on vectors ~ 1-forms

flat an/linear
 $\frac{1}{J} \frac{\partial}{\partial y_k} \left(\frac{J}{h_k} \frac{\partial}{\partial y_k} \right)$
 curved Laplacian

IB geom Laplace-Beltrami

△ + IR 3-operator
 @ Cos.
 METRIC ASSUMED

Forms on M^n (cpk) [5]
 $\Delta = \bar{\partial}^* \bar{\partial} + \bar{\partial} \bar{\partial}^* (= (\bar{\partial} + \bar{\partial}^*)^2)$
 Dolbeault Laplacian on forms

an in eq we used
 $\Delta T = h^{ij} (\nabla_{x_i} \nabla_{x_j} - \nabla_{x_j} \nabla_{x_i}) T$
 Laplacian on tensors

$\delta^* \delta + \delta \delta^*$
 Lichnerowicz
 Sp inner Laplacian [7]

$\Delta = \frac{n-1}{1}$
 Conformal Laplacian
 Diff Geom 3, @ Cos [6]
 CONFORMAL METRIC ASSUMED