

Výpočet křivosti na  $S^2$

$$S^2: \quad g = r_0^2 (d\vartheta^2 + \sin^2\vartheta d\varphi^2) = e^\vartheta e^\vartheta + e^\varphi e^\varphi$$

$$e^\vartheta = r_0 d\vartheta \quad e^\varphi = r_0 \sin\vartheta d\varphi$$

①  $de^\vartheta \quad de^\varphi$

② 1-formy  $\omega^k_l$   $\omega^k_l = -\omega^l_k$   $\omega^k_l = \delta_{kl}$

$$\omega^k_l = -\omega^l_k$$

$$de^k + \omega^k_l \wedge e^l = 0$$

1. Cartanovy rovn. str.

③ 2-formy křivosti  $\Omega^k_l$

$$\Omega^k_l = d\omega^k_l + \omega^k_m \wedge \omega^m_l$$

$$\Omega^k_l = -\Omega^l_k$$

④  $R = \Omega^k_l e_k e^l \rightarrow R_{\underline{ab}}^{\underline{c}}_{\underline{d}} = \Omega_{\underline{ab}}^{\underline{c}} e_{\underline{c}}^{\underline{d}}$

$$R_{\underline{abca}} = ?$$

⑤  $Ric_{\underline{ab}} = R_{\underline{ma}}^{\underline{m}}_{\underline{b}} = ?$

$$R = Ric_{\underline{ab}} \tilde{g}^{\underline{ab}} = ?$$