Corollary 2. *Let M be a surface in E^4 with the properties* (i), (ii) *and* (iv) *of Theorem* 2. *Let*

(iii) $4(H - 4K)K \geqq \langle \xi_1, \xi_1 \rangle + \langle \xi_2, \xi_2 \rangle > 0$ *on* M.

Then M is a part of a 2-dimensional sphere in E^4.

Proof. Choose again a field of orthonormal frames of M in such a way that $V_1 = v_1$, $V_2 = v_2$. Then (27) and (38) imply

$$\langle \xi_1, \xi_1 \rangle = (\alpha_1 + \gamma_1)^2 + (\alpha_2 + \gamma_2)^2 = \tfrac{1}{4}H^{-1}H_1^2,$$
$$\langle \xi_2, \xi_2 \rangle = (\beta_1 + \delta_1)^2 + (\beta_2 + \delta_2)^2 = \tfrac{1}{4}H^{-1}H_2^2$$

and hence

$$\langle \xi_1, \xi_1 \rangle + \langle \xi_2, \xi_2 \rangle = \tfrac{1}{4}H^{-1}(H_1^2 + H_2^2).$$

Thus (iii) and Theorem 2 prove our assertion.

References

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