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Widths of  $\Sigma$ -Hypernuclear States\*

M. Dillig<sup>+</sup>, V.E. Herscovitz and M.R. Teodoro

Absorptive central and spin-orbit potentials for  $\Sigma$ -hypernuclei can be derived from a one-meson exchange model for the  $\Sigma N \rightarrow \Lambda N$  conversion. A determination of the pion contribution to the width of  $\Sigma$ -hypernuclei is presented as an example for the  $1p$  state in  ${}^{12}_{\Sigma}C$ .

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\* IVth Braz. Workshop on Intern. Energy Phys., Rev. Bras. Fis. special vol. (1982) 87.

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Single Particle Energy Relativistic Estimation  
for  ${}^{16}_{\Sigma}O$  Hypernucleus\*

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A variational method has been used to estimate the single particle energies for the  ${}^{16}O$  hypernucleus in a relativistic description with meson exchange in the mean field approximation. Coupling constants and meson masses have been selected among the sets found in the literature that reproduced reasonably the phenomenological shell model potential for  ${}^{16}O$ ,  ${}^{16}_{\Lambda}O$  and

${}^{16}_{\Sigma}O$ .

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\* IVth Braz. Workshop on Interm. Energy Phys., Rev. Bras. Fis. special vol. (1982) 113.

1 | Mean Field of  $\Sigma$ -Hypernuclei\*

V.E. Herscovitz, M.R. Teodoro and M. Dillig<sup>+</sup>

The gross properties of  $\Sigma$ -hypernuclei are studied in a relativistic Dirac-Hartree approach to the nuclear mean-field of a  $\Sigma$ -hyperon. One-boson and two-boson exchange contributions as well as minimal short-range correlations are included. Through a relativistic reduction a binding and a spin-orbit splitting of  $\Sigma$  hypernuclear states are predicted.

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\* Spring Meeting of the Deutsche Physikalische Gesellschaft, Karlsruhe, W. Germany (1982); submitted to Int. Conf. on Hypernuclear and Kaon Physics, Heidelberg, W. Germany (1982).

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