

**NEW INVARIANT TENSORS IN CR STRUCTURES  
AND A NORMAL FORM FOR REAL  
HYPERSURFACES AT A GENERIC LEVI  
DEGENERACY**

PETER EBENFELT

**0. Introduction**

In 1974, Chern and Moser [11] solved the biholomorphic equivalence problem for real-analytic hypersurfaces in  $\mathbb{C}^{n+1}$  at Levi nondegenerate points. (The case  $n = 1$  was considered and solved by E. Cartan [9]–[10].) They presented a complete set of biholomorphic invariants for such a hypersurface at a Levi nondegenerate point; by a complete set of invariants, we mean a set of invariants such that given two hypersurfaces  $M, M' \subset \mathbb{C}^{n+1}$  with distinguished points  $p_0 \in M, p'_0 \in M'$ , there is a biholomorphic transformation  $Z' = H(Z)$  near  $p_0$  such that  $H(M) \subset M'$  and  $H(p_0) = p'_0$  if and only if the set of invariants for  $M$  and  $M'$  are equal. The Chern-Moser invariants can in principle (there is an infinite number of invariants) be computed from the Chern-Moser normal form, which is a normal form for a Levi nondegenerate hypersurface  $M$ , defined in terms of the Levi form at  $p_0 \in M$ , such that the transformation to normal form is unique modulo a finite dimensional normalization.

In the present paper, we introduce a new sequence of invariant tensors,  $\psi_2, \psi_3 \dots$ , for generic submanifolds of  $\mathbb{C}^N$  (Theorem 2.9), which can be viewed as higher order Levi forms. (Although the tensors are

---

Received April 28, 1998. The author was partially supported by a grant from the Swedish Natural Science Research Council.

1991 *Mathematics Subject Classification.* Primary 32F25; Secondary 32F40.