

## **CURRICULUM VITAE**

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### **ESTUDIOS:**

1954--1958 **Primaria:** Hamburgo, Alemania.

1958--1966 **Secundaria y Preparatoria:** Hebbelschule, Kiel, Alemania.

1967--1968: **Servicio militar.**

1968--1972 **Licenciatura en Física y Matemáticas:** Christian-Albrechts-Universidad, Kiel, Alemania.

**1972 Diploma de grado en Física.**

1976 **Doctorado en Física Teórica con "magna cum laude":** Tesis sobre "Quantum field theory in de Sitter space".

1984 **Habilitación:** Tesis "On the Hypotheses on which Geometrodynamics are founded". Docente privado en la Universidad de Kiel, Alemania.

**Idiomas:** Alemán, Inglés y Español.

### **EMPLEOS:**

1982 -- 1984 **Flensburg:** Escuela de entrenamiento para Maestro de Preparatoria.

1984 **Examen para maestros:** "Staatsexamen fuer das Lehramt an Gymnasien"

1984 --1991 **Universidad de Colonia:** Investigador asistente del Instituto de Física Teórica en el grupo de Friedrich W. Hehl con un proyecto financiado por la DFG (Fundación Nacional de Investigación Alemana) y la Fundación Alemania-Israel.

1991 --1992 **Hebbelschule Kiel:** Maestro de Preparatoria.

1993 -- 1994 **Universidad de Colonia:** Profesor sustituto de nivel C3.

1994, 1995--1997 **Universidad Autónoma Metropolitana Iztapalapa, México, D.F.:** Profesor visitante del Departamento de Física.

1997--a la fecha: **Profesor de Tiempo Completo (Titular C) en la UAM-I.**

### **ESTANCIAS DE INVESTIGACION:**

1972 -- 1976 **varias becas de "Studienstiftung des deutschen Volkes",** Universidad de Kiel, Alemania.

1973 -- 1974 **Universidad de Princeton, N.J.:** Estudios de relatividad general en la estimulación del grupo de John Archibald Wheeler con una beca de intercambio extranjero de la "Studienstiftung des deutschen Volkes".

1976 -- 1977 **Universidad de Oxford :** Investigación post doctoral en el Instituto Matemático en el grupo de Roger Penrose con una beca de la OTAN-DAAD (Servicio

de Intercambio Académico Alemán).

1978 -- 1980 Universidad de Kiel: Beca de investigación de la DFG.

1980 -- 1982 Centro de Física Teórica ICTP, Trieste (Director: Abdus Salam , Premio Nobel de Física en 1979) con una beca de habilitación de la DFG (Fundación Nacional de Investigación Alemana).

## INVESTIGACION Y ESPECIALIZACION:

Física teórica: Teoría de Norma, Relatividad General y Cosmología.

Contribuciones científicas:

Wheeler-DeWitt equation, knot theory and wormholes, conformal changes of metrics, Poincaré gauge theory and its metric-affine generalizations, double dual solutions, topological models of gravity with Chern-Simons terms, Ashtekar variables, boson stars, dark matter, and inflationary cosmology.

## LIBROS:

• Mielke, E.W. (1987): *Geometrodynamics of Gauge Fields --- On the geometry of Yang--Mills and gravitational gauge theories*, (Akademie--Verlag, Berlin), 242 pages.

• Mielke, E.W. (1997): *Sonne, Mond und ... Schwarze Loecher, Reihe Facetten* (Friedr. Vieweg & Sohn, Braunschweig/Wiesbaden, ISBN 3-528-06620-2), 282 pages and 12 color plates.

(*Sun, Moon, and ... Black Holes [in German]*: This popular book offers a short but quite enjoyable trip through recent developments in astronomy. There are sections on the astrophysics of the sun, the moon, stars, white dwarfs, supernovas, pulsars, and black holes. The emphasis is on observations through new windows via X-rays, neutrinos and gravitational waves.)

## REVIEWS:

• Hehl, F.W., J.D. McCrea, E.W. Mielke, and Y. Ne'eman (1995): "Metric--affine gauge theory of gravity: Field equations, Noether identities, world spinors, and breaking of dilation invariance", *Phys. Rep.* 258, 1 -- 171. ("Renowed paper" (Topcite 500+ in InSPIRE))

• Schunck, F.E. and E.W. Mielke (2003): "TOPICAL REVIEW: General relativistic boson stars", *Class. Quantum. Grav.* 20 , pp. R301 - R356. (Topcite 50+ in InSPIRE)

## ARTICULOS PUBLICADOS:

• Mielke, E.W. (1977): "Knot wormholes in geometrodynamics?", *Gen. Rel. Grav.* 8, 175 -- 196. [reprinted in *Knots and Applications*, L.H. Kauffman, ed. (World Scientific, Singapore 1995), p. 229 -- 250].

• Mielke, E.W. (1977): "Conformal changes of metrics and the initial-value problem of general relativity", *Gen. Rel. Grav.* 8, 321 -- 345.

• Mielke, E.W. (1977): "Quantenfeldtheorie im de Sitter-Raum", *Fortschr. Phys.* 25, 401 -- 457. (Dissertation, Univ. of Kiel 1976).

• Mielke, E.W. (1977): "Outline of a new geometrodynamical model of extended baryons", *Phys. Rev. Lett.* 39, 530 -- 533; 851 (E).

- Mielke, E.W. (1978): “Note on localized solutions of a nonlinear Klein-Gordon equation related to Riemannian geometry”, *Phys. Rev. D*18, 4525 -- 4528.
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- Deppert, W., and E.W. Mielke (1979): “Localized solutions of the nonlinear Heisenberg-Klein-Gordon equation: In flat and exterior Schwarzschild space-time”, *Phys. Rev. D*20, 1303 --1312.
- Mielke, E.W. (1980): “On exact solutions of the nonlinear Heisenberg-Klein-Gordon equation in a space-time of constant spacelike curvature”, *J. Math. Phys.* 21, 543 -- 546.
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- Mielke, E.W. (1981): “Toward exact solutions of the nonlinear Heisenberg-Pauli-Weyl spinor equation”, *J. Math. Phys.* 22, 2034 -- 2039.
- Mielke, E.W. (1981): “Empirical verification of recently proposed hadron mass formulas”, *Z. f. Naturforschung* 36a, 1315 -- 1318.
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- Baekler, P., and E.W. Mielke (1986): “Effective Einsteinian gravity from Poincaré gauge field theory”, *Phys. Letters* 113A, 471 -- 475.
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- McCrea, J.D., E.W. Mielke, and F.W. Hehl (1988): “A remark on the axisymmetric Chen et al. solution of the Poincaré gauge theory”, *Phys. Letters* A127, 65.
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- Mielke, E.W., and R.P. Wallner (1988): “Mass and spin of double dual solutions in Poincaré gauge theory”, *Nuovo Cimento* B101, 607 -- 624; (E): 102B, 555 (1988).
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- particles and of topological massive photons and gravitons in 2+1 dimensions”, *Phys. Lett. A*175, 277 -- 281.
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- Socorro, J., C. Laemmerzahl, A. Macías, and E.W. Mielke (1998): “Multipole-like solutions in metric-affine gravity”, *Phys. Lett. A* 244 317 -- 323.
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- Mielke, E.W. (2001): “Beautiful Gauge Field Equations in Cliffords”, *Int. J. Theor. Phys.* 40, 171 -- 189 (Proc. Ixtapa Conference on Clifford Algebra, June 27 --July 1999).
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## MEMORIAS IN EXTENSO

- Mielke, E.W. (1974a): "Quantum statistics of knot wormholes in geometrodynamics", Bull. Am. Phys. Soc. 19, 508.
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