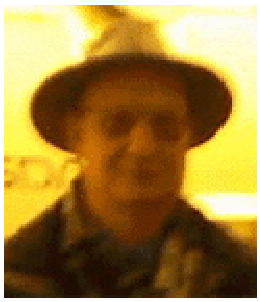
Marco C. Bernasconi, bio & publications

Marco C. Bernasconi, Ph.D



Marco obtained a Dr Sc Techn ETH and a Dipl Masch Ing ETH from the Swiss Federal Institute of Technology at Zurich in 1979 and 1974, respectively. At Contraves Space (in their different corporate forms) since 1978, has is Principal Engineer for mechanical systems studies since 1989. In addition, he was Vice-President for The OURS Foundation between 1990 and 1998 and, since April 1998, Scientific Director for Technologies of the Frontier. He has consulted for the Orbiting Unification Ring Satellite (OURS) Project (1986-89) and ESA/ESTEC (1995-97), and has acted in different consultative groups on space in Switzerland and Europe. At Contraves he has originated the effort on chemically-rigidized, inflatable space structures (ISRS) that in the 1980s brought to the Division international recognition in the field of large space structures. Since 2002 to 2003 he was associated partner in Andromeda S.r.l., where he covered the position of Head of Space Technologies Dept.

Between 1979 and 1986, the ISRS effort grew out of a 150-kAU "rate-of-return" study, via a 1-MAU basic-technology bridge, to a set of development contracts for 4.65 MAU placed by ESTEC after 1983.

Dr Bernasconi is a Full Member of the International Academy of Astronautics (IAA) and has organized and chaired sessions for the Symposia on Space Activities & Society between 1994-1999. In addition he is a Professional Member of the World Futures Society and a Member of AIAA, of IEEE, & of its Society for the Societal Implications of Technology. He has lectured on large space structures at the International Space University.

Dr Bernasconi speaks Italian, English, French, and German and has published or co-authored more than fifty papers, primarily on large space structures, planetary surface locomotion, and the relation of Astronautics to society. His doctoral thesis -- Thermally-Driven Acoustic Oscillations: Influence of Finite Temperature Gradients -- was presented as paper IAF-89-449 at the 40th International Astronautical Congress at Torremolinos.

Marco authored and coauthored hundreds of papers, both on scientifical and philosophical subjects. Hereafter a not exhaustive list:

Space Option and Ethics

- Marco C Bernasconi and Cristina Bernasconi, Why Implementing the Space Option Is Necessary for Society, presented at the 48th International Astronautical Congress, Turin (Italy) 1997; also: Acta Astronautica 54[05] (2004), 371-384
- Marco C Bernasconi, How the 21st-Century Society Can Sustain the Implementation of the Space Option, Technologies of the Frontier, 1997
- Marco C Bernasconi (1994). The Space Option & Our Future: Some Considerations on the Thermal Burden. Paper presented the BIS Symposium on "Space Industrialization as a Response to Global Threats," London (England), 23 June.
- Marco C Bernasconi (1995b). Ethics and the Astronautical Endeavour - Introductory Considerations. Paper IAA-95-IAA.8.1.01.
- Marco C Bernasconi (1997a). Broadening Space Utilization through Space Resources Exploitation: The Survival Mode - Why Extraterrestrial Resources Are Necessary. A position paper for the International Workshop on "Innovations for Competitiveness," ESTEC, 19-21 March.
- Marco C Bernasconi and Arthur R. Woods (1993a). Implementing the Space Option: Elaboration and Dissemination of a New Rationale for Space / Part I: . Paper IAA.8.1-93-764a.
- Marco C Bernasconi and Arthur R. Woods (1993b). Implementing the Space Option: Elaboration and Dissemination of a New Rationale for Space / Part II: The Space Option. Paper IAA.8.1-93-764b.
- Marco C Bernasconi, Astronautics: The Only Ethical Future, Technologies of the Frontier, 1997
- Donald Wesby, Unsustainable civilization?, Technologies of the Frontier, 1997
- Marco C Bernasconi, Three Levels for Astronautics, Technologies of the Frontier, 1997

Microwave transmission and solar-thermal capture

- M.C. Bernasconi (1984) - Large Spaceborne Antenna Reflectors Using Inflatable Space Rigidized Structures. - Paper presented at the 1st Workshop on Mechanical Technology for Antennas, ESTEC, 26-28 June; also: ESA SP-225, 31-36.
- G.G. Reibaldi and M.C. Bernasconi (1985- QUASAT Programme: The ESA Reflector. - Paper IAF-85-400 presented at the 36th International Astronautical Congress, Stockholm, 7-12 October; also: Acta Astronautica 15[], (1987), 181 - 187.

- MC Bernasconi, E Pagana, & GG Reibaldi (1985) - Inflatable, Space-Rigidized Reflectors for Mobile Missions. - Paper presented at the Globecom 1985 Conference, New Orleans (LA), December; reprinted in: CSELT Technical Reports 13[07], 437-441.
- GG Reibaldi, J Hammer, MC Bernasconi, & E Pagana (1986) - Inflatable Space Rigidized Reflector Development for Land Mobile Missions. - Paper AIAA-86-0692-CP presented at the AIAA 11th Communications Satellite Conference, San Diego (Calif), 17-20 March.
- M.C. Bernasconi (1986) - Development of a 2.8-m Offset Antenna Reflector Using Inflatable Space Rigidized Structure Technology. - Paper presented at the 2nd Workshop on Mechanical Technology for Antennas, ESTEC, 20-22 May; also: ESA SP-261, 31-39.
- E Pagana & MC Bernasconi (1986) - Prediction of the Electrical Performance of ISRS Offset Antenna Reflectors & Correlation with RF Measurements. - Paper presented at the 2nd Workshop on Mechanical Technology for Antennas, ESTEC, 20-22 May; also: ESA SP-261, 171-177; reprinted in: CSELT Technical Reports 16[01] (1988), 41-47.
- E Pagana & MC Bernasconi (1986) - Satellite Antenna with Inflatable Reflector (in Italian).
- MC Bernasconi, JA Hammer & E Pagana (1986) - RF Performance of the First 2.8-m Offset Inflatable Rigidized Reflector. - Paper presented at the JINA '86 Conference, Nice (France), 4-6 November.
- M.C. Bernasconi, E. Pagana, & G.G. Reibaldi (1987) - Large Inflatable, Space-Rigidized Antenna Reflectors: Land Mobile Services Development. - Paper IAF-87-315 presented at the 38th International Astronautical Congress, Brighton (UK), October 10-17.
- MC Bernasconi (1988) - Inflatable, Space-Rigidized Structures for Antenna Applications. - Paper prepared for the MM'88 Military Microwave Conference.
- M.C. Bernasconi (1988) - Inflatable, Space-Rigidized Antenna Reflectors: Flight Experiment Definition. - Paper IAF-88-049 presented at the 39th International Astronautical Congress, Bangalore (India), October 8-15.
- MC Bernasconi, DTG Gloster & WJ Rits (1989) - The L-Band ISRS Reflector for SAT2: A Summary of the Initial System Study. - Paper presented at the ESA Workshop on Antenna Technology, ESTEC, November 1-3; ESA WPP-12.
- K. van't Klooster, W.J. Rits, E. Pagana, P. Mantica & M.C. Bernasconi (1990) - An Inflatable Parabolic Reflector Antenna - Realization and Electrical Predictions. - Paper presented at the International Mirror Antenna Conference, Riga (Latvia), September 6-8; also: ESA Journal
  14[02], 211-216.

<u>Lightweight supports for power, propulsion, and scientific applications</u>

- M.C. Bernasconi, W. Seiz, and G.G. Reibaldi (1984). - Inflatable, Space-Rigidized Structures: Recent Development of the Material Technology. - Paper IAF-84-384; also: Aerotecnica Missili & Spazio 64[02] (1985), 71-85.
- G.G. Reibaldi and M.C. Bernasconi (1985). - QUASAT Programme: The ESA Reflector. - Paper IAF-85-400 presented at the 36th International Astronautical Congress, Stockholm, 7-12 October; also: Acta Astronautica 15[], (1987), 181 - 187.
- M.C. Bernasconi and G.G. Reibaldi (1985). - Inflatable, Space-Rigidized Structures: Overview of Applications & Their Technology Impact. - Paper IAF-85-210 presented at the 36th International Astronautical Congress, Stockholm, 7-12 October; also: Acta Astronautica 14 (1986), 455 - 465.
- MC Bernasconi and W Seiz (1988). - Inflatable, Space-Rigidized Structures: Ageing and Thermal Cycling Impact. - Proceedings of the 4th International Symposium on Spacecraft Materials in Space Environment, Toulouse (F), September 6 - 9, Cépaduès Editions, 555-561.
- M.C. Bernasconi & S. Köse (1988). - The Space-Rigidized Thermal Shield for the ESA Far-Infrared Space Telescope (FIRST).
- C Arduini, U Ponzi, & MC Bernasconi (1988). - A Contribution to the Study of the Precise Pressurized Structures. - Paper IAF-88-268 presented at the 39th International Astronautical Congress, Bangalore (India), October 8-15.
- M.C. Bernasconi & W.J. Rits (1989). - Inflatable Space Rigidized Support Structures for Large Spaceborne Optical Interferometer Systems. - Paper IAF-89-338 presented at the 40th International Astronautical Congress, Torremolinos (Spain), October 7-13; also: Acta Astronautica 22.
- MC Bernasconi, S Köse & WJ Rits (1989). - Optical Interferometers in Space: Configuration and Structural Concepts Using Space Rigidized Elements. Paper IAF-89-465 presented at the 40th International Astronautical Congress, Torremolinos (Spain), October 7-13; also: ESA SP-303, 47-56.
- Marco C. Bernasconi (1991). - Inflatable, Space-Rigidized Structures: Progress in Design, Technology and Verification. - Paper presented at the International Conference on Spacecraft Structures & Mechanical Testing, ESTEC, 24-26 April; also: ESA SP-321, 697-701. [URL: SP-321_697.pdf]
- P. Y. Bely, C. J. Burrows, F. J. Roddier, G. Weigelt & M. C. Bernasconi (1992). - SISTERS: A Space Interferometer for the Search for Terrestrial Exo-Planets by Rotation Shearing. - Paper presented at the ESA Colloquium on Targets for Space Based Interferometry, Beaulieu (France), October 13-16; also: ESA SP-354, 99-; also SPIE Proceedings 1947 (1993), 73-81. [URL: SPIE_1947_73.pdf]
- A.R. Woods & M.C. Bernasconi (1992). - Debris Removal & Protection Through the Use of Simple Expandable Structures. - Paper TOF PPH-92-007 accepted for presentation at the First European Space Debris Conference, Darmstadt (Germany). -
- Marco C Bernasconi (1993). - Expandable Support Structures for Large-Area Applications: The Solar Sail Case. - Presentation at the DLR Solar Sail Workshop, Cologne-Porz (Germany), May 5.
- Marco C Bernasconi (1994) - Design Rules for Expandable Support Structures for Near-Term, Large-Area Applications. Paper 94-F3-098 presented at the Deutscher Luft- & Raumfahrtkongress/ 1994 DGLR Annual Meeting, Erlangen (Germany), October 4-7, published in DGLR Jahrbuch 1994- I, 581-590. URL: DGLR_94-F3-098.pdf
- Marco C. Bernasconi & Thomas Zurbuchen (1994). - Lobed Solar Sails for a Small Mission to the Asteroids. - Paper IAA-L-0709

presented at the IAA International Conference on Low-Cost Planetary Missions, Laurel (MD), April 12-15; also: Acta Astronautica 35, 645-655.

- M.C. Bernasconi (1994) - A Small Solar Sailing Mission to Asteroids. - Paper presented at the meeting with University of Bern, 11 March 1994
- Marco C Bernasconi (1998) - Propulsive Uses of Inflatable Structures. Presentation at the Working Meeting on Low Cost Spacecraft Propulsion Technologies for Small Satellites, ESTEC (The Netherlands), 19-20 March. Contraves Space document ID-PRP/171-297/FPP.
- Marco C Bernasconi (1999) - Space-Habitat Uses of Expandable Flexible Structures. Paper presented at the ISST'99 - International Symposium on Space Travel, Bremen (Germany), 21-23 April. [URL: PRP_010-299_FPP.pdf]
- Marco C Bernasconi (2000) - Materials Aspects for Flexible-Wall Expandable Space Structures. Paper presented at the CEAS Conference on Materials for Aerospace Applications, Munich (Germany), 6-8 December; in: M Peters & WA Kaysser, Eds (2001). Advanced Aerospace Materials. DGLR, Bonn (Germany), 231-242. [URL: CEAS_2000.pdf]

Final Reports Series

- MC Bernasconi (1979). - Study on Large, Ultra-Light, Long-Life Structures in Space - Final Report / Phase I. ESA CR(P)-1258.
- MC Bernasconi (1982). - Study on Large, Ultra-Light, Long-Life Structures in Space - Final Report / Phase II. ESA CR(P)-1664 ; Contraves document TM-EKR3 82.07.01.
- M.C. Bernasconi (1983). - Study on Large, Ultra-Light, Long-Life Structures in Space / Final Report - Phase IIc. ESA CR(P)-1796 ; Contraves document TM-EKR3 83.07.02.
- MC Bernasconi, W. Seiz, & E. Pagana (1988). - Study of Inflatable Space Rigidized Antenna Reflector Structure Technology / Final Report - Phase III. ESA CR(X)-2769 ; Contraves document SR/IRS/110(88)CZ). -
- MC Bernasconi (1983). - An ISRS Solar Shield for FIRST / A Preliminary Feasibility Assessment. Contraves document TM-EKR3_83.07.15.
- MC Bernasconi (1984). - An ISRS Reflector for QUASAT / Final Report - Feasibility Study. ESA CR(P)-9996; Contraves document SR/QSR/001(84)CZ.
- CE Jebens & MC Bernasconi (1988). - An ISRS Reflector for QUASAT / Final Report - Phase 2. ESA CR(P)-2913; Contraves document SR/QSR/108(88)CZ.
- MC Bernasconi (1989). - An Inflatable, Space-Rigidized Reflector for QUASAT / Executive Summary - Phase 2. SR/QSR/109(88)CZ, 4 pp.
- MC Bernasconi, H Stanna, & JR Butcher (1988). - Flight Experiment of a LOAD-3 Inflatable, Space-Rigidized Assembly / Final Report - Development Study. ESA CR(P)-9995; Contraves document SR/FLX/110(88)CZ.
- MC Bernasconi (1988). - Flight Experiment of a LOAD-3 Inflatable, Space-Rigidized Assembly / Executive Summary - Development Study. ESA CR(P)-9995; Contraves document SR/FLX/111(88)CZ.
- MC Bernasconi (1991). - Very Large ISRS Struts / Final Report - Feasibility Study. ESA CR(P)-9997; Contraves document SR/LIS/110(90)CZ.
- Marco C Bernasconi (1997). - Study of an Inflatable Space-Rigidized Support Structure for the Daedalus Solar Sail -- Sail Geometries Options & System Design Outline. Contraves-Space documents SN/LIS/101(97)DER-B, SN/LIS/102(97)DER.
- François Corberand, F Bravais, Marco C Bernasconi, & alii (2001). - Solar Thermal Upper Stage Technologies for Future Launcher Generation Program - STOTS / Final Report. ESA CR-9999; EADS Launch Vehicles document YX/PL-135110.
- Marco C Bernasconi, R Seibold, & D Kaiser (2002). - IFES Membrane Antenna --- Inflatable Superstructure Feasibility Study/ Final Report. Contraves document SN/IRS/131(01)RVW, Issue A-2.

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