

**List of Publications**  
**Alessandro DE LUCA**  
**September 2011**

**Edited Books**

- [B-1] B. Siciliano, A. De Luca, C. Melchiorri, G. Casalino (Eds.), *Advances in Control of Articulated and Mobile Robots*, Springer Tracts in Advanced Robotics, vol. 10, Springer Verlag, Berlin, 2004.

**Edited Proceedings**

- [P-1] A. Isidori, S. Bittanti, E. Mosca, A. De Luca, M.D. Di Benedetto, G. Oriolo (Eds.), *Proceedings of the 3rd European Control Conference (ECC 95)*, Roma, Italy, Sep. 1995.

**Refereed International Journals**

- [J-38] J. Souman, P. Robuffo Giordano, M. Schwaiger, I. Frissen, T. Thümmel, H. Ulbrich, A. De Luca, H.H. Bühlhoff, M. Ernst, “CyberWalk: Enabling unconstrained omnidirectional walking through virtual environments,” *ACM Transactions on Applied Perception*, accepted for publication in Jan. 2011, to appear in vol. 8, no. 4, Oct.-Nov. 2011.
- [J-37] J. Souman, P. Robuffo Giordano, I. Frissen, A. De Luca, M. Ernst, “Making virtual walking real: Perceptual evaluation of a new treadmill control algorithm,” *ACM Transactions on Applied Perception*, vol. 7, no. 2, pp. 11:1–11:14, 2010.
- [J-36] A. De Luca, G. Oriolo, P. Robuffo Giordano, “Feature depth observation for image based visual servoing: Theory and experiments,” *International Journal of Robotics Research*, vol. 27, no. 10, pp. 1093–1116, 2008.
- [J-35] A. De Santis, B. Siciliano, A. De Luca, A. Bicchi, “An atlas of physical human-robot interaction,” *Mechanism and Machine Theory*, vol. 43, no. 3, pp. 253–270, 2008.
- [J-34] A. De Luca, G. Oriolo, P. Robuffo Giordano, “Image-based visual servoing schemes for nonholonomic mobile manipulators,” *Robotica*, Special Issue on *Mobile Manipulators: Basic Techniques, New Trends & Applications*, vol. 25, no. 2, pp. 131–145, 2007.
- [J-33] R. Mattone, A. De Luca, “Nonlinear fault detection and isolation in a three-tank heating system,” *IEEE Transactions on Control Systems Technology*, vol. 14, no. 6, pp. 1158–1166, 2006.
- [J-32] R. Mattone, A. De Luca, “Relaxed fault detection and isolation: An application to a nonlinear case study,” *Automatica*, vol. 42, no. 1, pp. 109–116, 2006.
- [J-31] A. De Luca, B. Siciliano, L. Zollo, “PD control with on-line gravity compensation for robots with elastic joints: Theory and experiments,” *Automatica*, vol. 41, no. 10, pp. 1809–1819, 2005.
- [J-30] L. Zollo, B. Siciliano, A. De Luca, E. Guglielmelli, P. Dario, “Compliance control for an anthropomorphic robot with elastic joints: Theory and experiments,” *ASME Transactions: Journal of Dynamic Systems, Measurements, and Control*, vol. 127, no. 3, pp. 321–328, 2005.

- [J-29] M. Benosman, G. Le Vey, L. Lanari, A. De Luca, “Rest to rest motion for planar multi-link flexible manipulators through backward recursion,” *ASME Transactions: Journal of Dynamic Systems, Measurements, and Control*, vol. 126, no. 1, pp. 115–123, 2004.
- [J-28] S. Iannitti, A. De Luca, “Dynamic feedback control of  $XYn\bar{R}$  planar robots with  $n$  rotational passive joints,” *Journal of Robotic Systems*, vol. 20, no. 5, pp. 251–270, 2003.
- [J-27] A. De Luca, S. Iannitti, R. Mattone, G. Oriolo, “Underactuated manipulators: Control properties and techniques,” *Machine Intelligence and Robotic Control*, vol. 4, no. 3, pp. 113–125, 2002.
- [J-26] G. Oriolo, A. De Luca, M. Vendittelli, “WMR control via dynamic feedback linearization: Design, implementation and experimental validation,” *IEEE Transactions on Control Systems Technology*, vol. 10, no. 6, pp. 835–852, 2002.
- [J-25] A. De Luca, G. Oriolo, “Trajectory planning and control for planar robots with passive last joint,” *International Journal of Robotics Research*, vol. 21, no. 5–6, pp. 575–590, 2002.
- [J-24] A. De Luca, G. Oriolo, “Comments on ‘Adaptive variable structure set-point control of underactuated robots’,” *IEEE Transactions on Automatic Control*, vol. 46, no. 5, pp. 809–811, 2001.
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- [J-11] A. De Luca, B. Siciliano, “Inversion-based nonlinear control of robot arms with flexible links,” *AIAA Journal of Guidance, Control, and Dynamics*, vol. 16, no. 6, pp. 1169–1176, 1993.
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- [J-3] A. De Luca, P. Lucibello, G. Ulivi, “Inversion techniques for trajectory control of flexible robot arms,” *Journal of Robotic Systems*, vol. 6, no. 4, pp. 325–344, 1989.
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- [J-1] A. De Luca, G. Di Pillo, “Exact augmented Lagrangian approach to multilevel optimization of large-scale systems,” *International Journal of Systems Science*, vol. 18, no. 1, pp. 157–176, 1987.

## Invited Chapters in Books

- [BC-12] A. De Luca, W. Book, “Robots with Flexible Elements,” in B. Siciliano, O. Khatib (Eds.) *Springer Handbook of Robotics*, pp. 287–319, Springer Verlag, Berlin, 2008.
- [BC-11] A. De Luca, G. Oriolo, M. Vendittelli, S. Iannitti, “Planning Motions for Robotic Systems Subject to Differential Constraints,” in B. Siciliano, A. De Luca, C. Melchiorri, G. Casalino (Eds.) *Advances in Control of Articulated and Mobile Robots*, Springer Tracts in Advanced Robotics, vol. 10, pp. 1–38, Springer Verlag, Berlin, 2004.
- [BC-10] A. De Luca, V. Caiano, D. Del Vecovo, “Experiments on Rest-to-rest Motion of a Flexible Arm,” in B. Siciliano, P. Dario (Eds.) *Experimental Robotics VIII*, Springer Tracts in Advanced Robotics, vol. 5, pp. 338–349, Springer Verlag, Berlin, 2003.
- [BC-9] A. De Luca, G. Oriolo, M. Vendittelli, “Control of Wheeled Mobile Robots: An Experimental Overview,” in S. Nicosia, B. Siciliano, A. Bicchi, P. Valigi (Eds.) *RAMSETE. Articulated and Mobile Robots for SERVICES and TECHNOLOGY*, Lecture Notes in Control and Information Sciences, vol. 270, pp. 181–226, Springer Verlag, London, 2001.

- [BC-8] A. De Luca, “Trajectory Control of Flexible Manipulators,” in B. Siciliano, K.P. Valavanis (Eds.) *Control Problems in Robotics and Automation*, Lecture Notes in Control and Information Sciences, vol. 230, pp. 83–104, Springer Verlag, London, 1998.
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- [BC-6] A. De Luca, B. Siciliano, “Flexible Links,” in C. Canudas de Wit, B. Siciliano, G. Bastin (Eds.) *Theory of Robot Control*, pp. 219–261, Springer Verlag, Berlin, 1996.
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- [BC-3] A. De Luca, G. Oriolo, “Modelling and Control of Nonholonomic Mechanical Systems,” in J. Angeles, A. Kecskemethy (Eds.) *Kinematics and Dynamics of Multi-Body Systems*, CISM Courses and Lectures, vol. 360, pp. 277–342, Springer Verlag, Wien, 1995.
- [BC-2] A. De Luca, S. Monaco, “Robotica,” in *Enciclopedia Italiana Treccani*, Appendix V, vol. 4, pp. 553–557, Treccani, Roma, 1994 (in Italian).
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## Refereed International Conferences

- [C-118] F. Flacco, A. De Luca, I. Sardellitti, N. Tsagarakis “Robust estimation of variable stiffness in flexible joints,” *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Francisco, CA, pp. 4026–4033, 2011.
- [C-117] G. Milighetti, L. Vallone, A. De Luca “Adaptive predictive gaze control of a redundant humanoid robot head,” *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Francisco, CA, pp. 3192–3198, 2011.
- [C-116] F. Flacco, T. Kröger, A. De Luca, O. Khatib “Collision avoidance in depth space,” *RSS 2011 Workshop on RGB-D: Advanced Reasoning with Depth Cameras*, Los Angeles, CA, Jun. 2011.
- [C-115] F. Flacco, A. De Luca “Stiffness estimation and nonlinear control of robots with variable stiffness actuation,” *18th IFAC World Congress*, Milano, I, pp. 6872–6879, 2011.
- [C-114] F. Flacco, A. De Luca “Residual-based stiffness estimation in robots with flexible transmissions,” *2011 IEEE International Conference on Robotics and Automation*, Shanghai, PRC, pp. 5541–5547, 2011.
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- [C-111] F. Flacco, A. De Luca, “Multiple depth/presence sensors: Integration and optimal placement for human/robot coexistence,” *2010 IEEE International Conference on Robotics and Automation*, Anchorage, AK, pp. 3916–3923, 2010.
- [C-110] A. De Luca, G. Oriolo, P. Robuffo Giordano, “Kinematic control of nonholonomic mobile manipulators in the presence of steering wheels” *2010 IEEE International Conference on Robotics and Automation*, Anchorage, AK, pp. 1792–1798, 2010.
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- [C-106] L. Le Tien, A. Albu-Schäffer, A. De Luca, G. Hirzinger, “Friction observer and compensation for control of robots with joint torque measurements,” *2008 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Nice, F, pp. 3789–3795, Sep. 2008.
- [C-105] S. Haddadin, A. Albu-Schäffer, A. De Luca, G. Hirzinger, “Collision detection and reaction: A contribution to safe physical human-robot interaction,” *2008 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Nice, F, pp. 3356–3363, Sep. 2008 (*IROS 2008 Best Application Paper Award*).
- [C-104] A. De Luca, L. Ferrajoli, “Exploiting robot redundancy in collision detection and reaction,” *2008 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Nice, F, pp. 3299–3305, Sep. 2008.
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- [C-87] R. Mattone, A. De Luca, "Geometric and hierarchical FDI for the IFATIS two-tank pilot plant," *16th IFAC World Congress*, Praha, CZ, Jul. 2005.
- [C-86] A. De Luca, R. Farina, P. Lucibello, "On the control of robots with visco-elastic joints" *2005 IEEE International Conference on Robotics and Automation*, Barcelona, E, pp. 4297–4302, Apr. 2005.
- [C-85] A. De Luca, R. Mattone, "Sensorless robot collision detection and hybrid force/motion control," *2005 IEEE International Conference on Robotics and Automation*, Barcelona, E, pp. 999–1004, Apr. 2005.
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