Some peer reviewed papers from previous LDC and / or RPM studies (non-exhaustive list) on:

general, cell biology, plant biology, animal physiology, fluid physics, plasma physics, geology/planetary, technology, material sciences and other topics:

- Romano L E, van Loon J J, Izzo L G, Iovane M, Aronne G. Effects of altered gravity on growth and morphology in Wolffia globosa implications for bioregenerative life support systems and space-based agriculture. Scientific reports, 2024, 14(1): 410. https://doi.org/10.1038/s41598-023-49680-3.
- Huang C, Hecht U. An Analysis of Solidification Experiments With a Ti-46Al-8Nb Alloy Under Centrifugal Conditions: Modelling of Flow–Solidification Interaction and Grain Structure Evolution Using a Cellular Automaton With Finite Volume Method. Metallurgical and Materials Transactions B, 2023, 54(1): 146-162. https://doi.org/10.1007/s11663-022-02676-2.
- Valentina Bonetto, Valeria Magnelli, Maurizio Sabbatini, Flavia Caprì, Jack J.W.A. van Loon, Sara Tavella, Maria Angela Masini. The importance of gravity vector on adult mammalian organisms: Effects of hyper-gravity on mouse testis. PLOS ONE 2023. https://doi.org/10.1371/journal.pone.0282625.
- Wilhelmina E. Radstake, Kiran Gautam, Silvana Miranda, Cynthia Van Rompay, Randy Vermeesen, Kevin Tabury,Mieke Verslegers, Alan Dowson, Jeffrey Gorissen, Jack J. W. A. van Loon, Nigel D. L. Savage, Sarah Baatout, Bjorn Baselet. Gravitational effects onfibroblasts'function in relation towound healing. npj Microgravity (2023) 48. DOI:https://www.nature.com/articles/s41526-023-00286-z
- Simon Á, Tozar T, Smarandache A, Boni M, Stoicu A, Dowson A, van Loon J J, Pascu M L. Stability Studies of UV Laser Irradiated Promethazine and Thioridazine after Exposure to Hypergravity Conditions. Molecules, 2022, 27(5): 1728. DOI: 10.3390/molecules27051728.
- Luigi Gennaro Izzo1, Leone Ermes Romano, Lucius Wilhelminus Franciscus Muthert, Maurizio Iovane, Fiore Capozzi, Aránzazu Manzano, Malgorzata Ciska, Raúl Herranz, F. Javier Medina, John Z. Kiss, Jack J.W.A. van Loon, Giovanna Aronne. Interaction of gravitropism and phototropism in roots of Brassica oleracea. Environ Exp Bot. Volume 193, January 2022. DOI: 10.1016/j.envexpbot.2021.104700.
- Giovanna Aronne, Lucius Wilhelminus Franciscus Muthert, Luigi Gennaro Izzo, Leone Ermes Romano, Maurizio Iovane, Fiore Capozzi, Aránzazu Manzano, Malgorzata Ciska, Raúl Herranz, F.Javier Medina, John Z.Kiss, Jack J.W.A. van Loon. A novel device to study altered gravity and light interactions in seedling tropisms. Life Sciences in Space Research, vol. 32, 8-16, 2022. DOI: 10.1016/j.lssr.2021.09.005.
- Ágota Simon, Adriana Smarandache, Tatiana Tozar, Ionuţ R. Andrei, Alexandru Stoicu, Jack J.W.A. van Loon, Alan Dowson, Mihail L. Pascu. "Photoactive chlorpromazine and promazine drugs exposed to hypergravity conditions after interaction with UV laser radiation.". Acta astronautica 189: 260-268, 2021. DOI: 10.1016/j.actaastro.2021.08.038.
- Cláudia Azevedo, Maria Helena Macedo, Andreia Almeida, Soraia Pinto, Jack J.W.A. van Loon, Bruno Sarmento. (2021). "The effect of hypergravity in intestinal permeability of nanoformulations and molecules." European Journal of Pharmaceutics and Biopharmaceutics 163: 38-48. DOI: 10.1016/j.ejpb.2021.03.013.
- Alessandra Salvetti, Andrea Degl'Innocenti, Gaetana Gambino, Jack J.W.A. van Loon, Chiara Ippolito, Sandra Ghelardoni, Eric Ghigo, Luca Leoncino, Mirko Prato, Leonardo Rossi, Gianni Ciofani. Artificially altered gravity elicits cell homeostasis imbalance in planarian worms, and cerium oxide nanoparticles counteract this effect. Journal of Biomedical Materials Research Part A, 1–12, 2021. DOI: 10.1002/jbm.a.37215.
- Julia Eckert, Jack JWA van Loon, Lukas M Eng, Thomas Schmidt. Hypergravity affects cell traction forces of fibroblasts. Biophys J. 2021 Mar 2;120(5):773-780. doi: 10.1016/j.bpj.2021.01.021.
- Huang C, Hecht U, Bührig-Polaczek A. Numerical Modeling of Melting and Columnar Solidification with Convection in a Gradient Zone Furnace in a Centrifuge. Metallurgical and Materials Transactions B, 2020, 51(5): 2252-2267. https://doi.org/10.1007/s11663-020-01914-9.
- Elizabeth A. Lawrence, Jessye Aggleton, Jack van Loon, Josepha Godivier, Robert L. Harniman, Jiaxin Pei, Niamh C. Nowlan, Christina Hammond. Exposure to hypergravity during zebrafish development alters cartilage material properties and strain distribution. Bone Joint Res 2021;10(2):137–148. doi: 10.1302/2046-3758.102.BJR-2020-0239.R1 (bioRxiv preprint server biology 2020: DOI: 10.1101/2020.05.26.116046)

- Viardin A, Zollinger J, Sturz L, Apel M, Eiken J, Berger R, Hecht U. (2020) Columnar dendritic solidification of TiAl under diffusive and hypergravity conditions investigated by phase-field simulations. Computational Materials Science, 2020, 172: 109358. DOI: 10.1016/j.commatsci.2019.109358.
- Fernández M C, Založnik M, Combeau H, Hecht U. Thermosolutal convection and macrosegregation during directional solidification of TiAl alloys in centrifugal casting. International Journal of Heat and Mass Transfer, 2020, 154: 119698. https://doi.org/10.1016/j.ijheatmasstransfer.2020.119698.
- Fernández M C, Založnik M, Combeau H, Huang C, Zollinger J, Hecht U. (2019) Effect of the Coriolis force on the macrosegregation of aluminum in the centrifugal casting of Ti-Al alloys. IOP Conference Series: Materials Science and Engineering: IOP Publishing, 2019. 012033. DOI: 10.1088/1757-899X/529/1/012033.
- Nídia de Sousa, Marcello Caporicci, Jeroen Vandersteen, Jose Ignacio Rojo-Laguna, Emili Saló, Teresa Adell, Gennaro Auletta & Jack J.W.A. van Loon. (2020). "Molecular impact of launch related dynamic vibrations and static hypergravity in planarians." NPJ Microgravity 6(1): 25. doi: 10.1038/s41526-020-00115-7.
- Jack J.W.A. van Loon. Some Challenges in Gravity Related Research. Front. Space Technol - Microgravity 16 June, 2020. doi: 10.3389/frspt.2020.00003.
- Chiara De Cesari, Ivana Barravecchia, Olga V. Pyankova, Matteo Vezza, Marco M. Germani, Francesca Scebba, Jack J.W.A. van Loon, Debora Angeloni. Hypergravity activates a pro-angiogenic homeostatic response by human capillary endothelial cells. J. Mol. Sci. 2020, 21, 2354. doi: 10.3390/ijms21072354
- A. Cazaubiel S. Mawet, A. Darras, G. Grosjean, J.J.W.A. van Loon, S. Dorbolo, E. Falcon (2019) Wave turbulence on the surface of a fluid in a high-gravity environment. Physical Review Letters, American Physical Society, 2019. Published on 08 Nov 2019. https://link.aps.org/doi/10.1103/PhysRevLett.123.244501
- Oikonomidou, O., van Loon, J. J. W. A., Schwarz, C. J., Kostoglou, M., & Karapantsios, T. D. (2019). A Note on Liquid Velocities Arising during Decompression Degassing in Hypergravity. Microgravity science and technology. doi:10.1007/s12217-019-09740-8.
- Oikonomidou, O., Evgenidis, S. P., Schwarz, C. J., van Loon, J. J., Kostoglou, M., & Karapantsios, T. D. Degassing of a decompressed flowing liquid under hypergravity conditions. International journal of multiphase flow. 115, 126–136, 2019. DOI: doi.org/10.1016/j.ijmultiphaseflow.2019.03.029.
- Emma M. Woodcock, Paul Girvana, Julia Eckert, Ismael Lopez Duarte, Markéta Kubánková, Jack J.W.A. van Loon, Nicholas J. Brooks, Marina K. Kuimova. Measuring intracellular viscosity in conditions of hypergravity. Biophys J. 116, 1-10, May 21, 2019. https://doi.org/10.1016/j.bpj.2019.03.038
- Maria C. Vlachou, John S. Lioumbas, Margaritis Kostoglou, Kostantinos David, Dimitrios Chasapis, Christian Schwarz, Jack J.W.A. van Loon, Thodoris D. Karapantsios. Subcooled flow boiling in horizontal and vertical macro-channel under Earth-gravity and hyper-gravity conditions. Int J Heat Mass Transfer, Vol.133. P. 36-51, April 2019. DOI: doi.org/10.1016/j.ijheatmasstransfer.2018.12.086.
- Martijn C. Bart, Sebastiaan J. de Vet, Didier M. de Bakker, Brittany E. Alexander, Dick van Oevelen, E. Emiel van Loon, Jack J.W.A. van Loon, Jasper M. de Goeij. Spiculous skeleton formation in the freshwater sponge Ephydatia fluviatilis under hypergravity conditions. PeerJ. 4 Jan. 2019; 6:e6055. DOI 10.7717/peerj.6055.
- Battaglioli, S., Robinson, A., & McFadden, S. (2018). Influence of natural and forced gravity conditions during directional columnar solidification. International Journal of Heat and Mass Transfer, 126, 66-80. https://doi.org/10.1016/j.ijheatmasstransfer.2018.05.151
- Alessandro Simone Viglione, Federico Celi, Mauro Mameli, Paolo Di Marco, Sauro Filippeschi. Melting Front Evolution of Paraffin Wax Inside Metal Foams at Different Acceleration Levels. Proceedings 16th International Heat Transfer Conference, IHTC-16: Begell House, 2018. 5111-5122. DOI: 10.1615/IHTC16.hte.024215.
- Khaled Kamal, Raul Herranz, Jack J.W.A. Van Loon, and F. Javier Medina. Simulated microgravity, Mars gravity, and 2g hypergravity affect cell cycle regulation, ribosome biogenesis, and epigenetics in Arabidopsis cell cultures". Scientific Reports Article number:6424, 2018. (published: 23-4-2018). doi:10.1038/s41598-018-24942-7.
- Nídia de Sousa, Gustavo Rodriguez-Esteban, Ivan Colagè, Paolo D'Ambrosio, Jack J.W.A. van Loon, Emili Saló, Teresa Adell, Gennaro Auletta. Transcriptomic analysis of Planarians under simulated microgravity or 8g demonstrates that alteration of gravity induces genomic and cellular alterations that could facilitate tumoral transformation. Int. J. Mol. Sci. 2019. DOI: 10.3390/ijms20030720
- Fabrizio Quadrini, Giovanni Matteo Tedde, Loredana Santo, Jack J.W.A. van Loon. Solid state foaming of epoxy resin under hyper-gravity and simulated micro-gravity. Adv Polym Technol. 1–9, 2018. DOI: 10.1002/adv.21937.

- Thermal analysis of pre-boiling regime in frying experiments at several sample orientations and gravity levels. Lioumbas, John S.; Kostoglou, Margaritis; Karapantsios, Thodoris D. FOOD AND BIOPRODUCTS PROCESSING, 102, 350-361, MAR 2017. https://doi.org/10.1016/j.fbp.2017.02.001
- Costa-Almeida R, Carvalho DTO, Ferreira MJS, Pesqueira T, Monici M, van Loon JJWA, Granja PL, Gomes ME. Continuous exposure to simulated hypergravity induced changes in proliferation, morphology and gene expression of human tendon cells. Stem Cells Dev. 2018 Mar 16; doi: 10.1089/scd.2017.0206.
- Lucia Potočňáková, Jiří Šperka, Petr Zikán, Jack JWA van Loon, Job Beckers, Vít Kudrle. Experimental study of gliding arc plasma channel motion: buoyancy and gas flow phenomena under normal and hypergravity conditions. Plasma Sources Science and Technology, 26(4), 045014, 2017. doi.org/10.1088/1361-6595/aa5ee8.
- Firstbrook, D., Worrall, K., Timoney, R., Suñol, F., Gao, Y., & Harkness, P. (2017). An experimental study of ultrasonic vibration and the penetration of granular material. Proceedings. Mathematical, physical, and engineering sciences, 473(2198).doi: 10.1098/rspa.2016.0673.
- Kamal K.Y., Herranz R., van Loon J.J.W.A, Medina F.J. Embedding plant cell suspensions in agarose makes this biological system suitable for altered gravity studies in mechanical simulators. Acta Astronautica. 29(1-2), 115–119, 2017. https://doi.org/10.1007/s12217-016-9531-8
- Simon, Á., Stoicu, A., Tozar, T., Andrei, I. R., Simion, S., van Loon, J., . . . Lucian, M. (2017). Microvolumetric droplets in air in hypergravity conditions. Book: Laser optofluidics in fighting multiple drug resistance, pp 428-445. ISBN 978-1-68108-499-2
- Raquel Costa-Almeida, Daniel TO Carvalho, Miguel JS Ferreira, Guilherme Aresta, Manuela E Gomes, Jack JWA van Loon, Kim Van der Heiden, Pedro L Granja. Effects of hypergravity on the angiogenic potential of endothelial cells. Journal of The Royal Society Interface. 1(24), 20160688, 2016. DOI: 10.1098/rsif.2016.0688.
- Ana Isabel Manzano, Raul Herranz, Aránzazu Manzano, Jack J. Van Loon, Francisco Javier Medina. Early effects of altered gravity environments on plant cell growth and cell proliferation: Characterization of morphofunctional nucleolar types in an Arabidopsis cell culture system. Front. Astron. Space Sci., 05 February 2016. http://dx.doi.org/10.3389/fspas.2016.00002.
- Timo Frett, Guido Petrat, Jack J. W. A. van Loon, Ruth Hemmersbach, Ralf Anken. Hypergravity facilities in the ESA ground-Based facility program – Current research activities and future tasks. Microgravity Sci. Technol. Published on line 24 Oct. 2015. DOI 10.1007/s12217-015-9462-9
- Potočňáková L., Šperka J., Zikán P., van Loon J J W A, Beckers J., Kudrle V. Gravity effects on a gliding arc in four noble gases: from normal to hypergravity. Plasma Sources Sci. Technol. 24, 2015. doi:10.1088/0963-0252/24/2/022002
- Jessica Aceto, Rasoul Nourizadeh-Lillabadi, Raphael Marée, Nadia Dardenne, Nathalie Jeanray, Louis Wehenkel, Peter Aleström, Jack J. W. A. van Loon, Marc Muller. Zebrafish bone and general physiology are differently affected by hormones or changes in gravity. PLOS ONE, June 10, 2015. DOI:10.1371/journal.pone.0126928.
- Sunol, F., & González-Cinca, R. (2015). Effects of gravity level on bubble formation and rise in low-viscosity liquids. Physical Review E, 91(5), 053009. https://doi.org/10.1103/PhysRevE.91.053009
- Leidenfrost drops: Effect of gravity. Maquet, L; Brandenbourger, M; Sobac, B; Biance, AL; Colinet, P; Dorbolo, S. EPL, 10/2, #24001, April 2015. DOI: 10.1209/0295-5075/110/24001.
- Herranz R, Valbuena M A, Manzano A, Y. Kamal K, Medina F J. Use of Microgravity Simulators for Plant Biological Studies. In: Blancaflor E B, ed. Plant Gravitropism: Methods and Protocols. New York, NY: Springer New York, 2015, 239-254. https://doi.org/10.1007/978-1-4939-2697-8_18.
- Masi, E., Ciszak, M., Comparini, D., Monetti, E., Pandolfi, C., Azzarello, E., . . . Mancuso, S. (2015). The electrical network of maize root apex is gravity dependent. Sci Rep, 5, 7730. doi:10.1038/srep07730.
- Rocca, A., Marino, A., Rocca, V., Moscato, S., de Vito, G., Piazza, V., . . . Ciofani, G. (2015). Barium titanate nanoparticles and hypergravity stimulation improve differentiation of mesenchymal stem cells into osteoblasts. Int J Nanomedicine, 10, 433-445. doi:10.2147/IJN.S76329
- Robert Szulcek, Jan van Bezu, Johannes Boonstra, Jack J.W.A. van Loon, Geerten P. van Nieuw Amerongen. Transient intervals of hyper-gravity enhance endothelial barrier integrity: Impact of mechanical and gravitational forces measured electrically. PLOS One: December 4, 2015, doi: 10.1371/journal.pone.0144269.
- Teresa Adell, Emili Saló, Jack J. W. A. van Loon, Gennaro Auletta. Planarians sense simulated microgravity and hypergravity. BioMed Research International. Volume 2014, 2014. DOI: 10.1155/2014/679672.
- Pandolfi, C., Masi, E., Voigt, B., Mugnai, S., Volkmann, D., & Mancuso, S. (2014). Gravity affects the closure of the traps in Dionaea muscipula. BioMed Research International, 2014. http://dx.doi.org/10.1155/2014/964203
- Jiri Sperka, Pavel Soucek, Jack J.W.A. Van Loon, Alan Dowson, Christian Schwarz, Jutta Krause, Yuriy Butenko, Gerrit Kroesen, Vit Kudrle. Hypergravity synthesis of graphitic carbon nanomaterial in glide arc plasma Materials Research Bulletin, 61-65, 54, 2014.

http://dx.doi.org/10.1016/j.materresbull.2014.03.013
- Prodanov, Ljupcho; van Loon, Jack J. W. A.; te Riet, Joost, Jansen J.A., Walboomers X.F. Substrate nanotexture and hypergravity through centrifugation enhance initial osteoblastogenesis. Tissue Eng Part A. 19(1-2), pp. 114-124, 2013. DOI: 10.1089/ten.tea.2012.0267.
- Jiří Šperka, Pavel Souček, Jack J. W. A. Van Loon, Alan Dowson, Christian Schwarz, Jutta Krause, Gerrit Kroesen, Vít Kudrle. Hypergravity effects on glide arc plasma. The European Physical Journal D. 67:261, 2013. DOI: 10.1140/epjd/e2013-40408-7.
- S. Dorbolo L. Maquet, M. Brandenbourger, F. Ludewig, G. Lumay, H. Caps, N. Vandewalle, S. Rondia, M. Melard, J.J. van Loon, A. Dowson S. Vincent-Bonnieu. Influence of the gravity on the discharge of a silo. Granular Matter 15:263–273, 2013. DOI 10.1007/s10035-013-0403-2
- Youssef Chebli, Lauranne Pujol, Anahid Shojaeifard, Iman Brouwer, Jack J.W.A. van Loon, Anja Geitmann. Cell wall assembly and intracellular trafficking in plant cells are directly affected by changes in the magnitude of gravitational acceleration. Plos One, 8(3), e58246, 2013. doi:10.1371/journal.pone.0058246.
- Paloma Serrano, Jack J.W. A. van Loon, F. Javier Medina, Raul Herranz Relation between motility accelerated aging and gene expression in selected Drosophila strains under hypergravity conditions. Microgravity Sci. Technol. (2013) 25:67–72. DOI 10.1007/s12217-012-9334-5.
- Bubble dynamics and substrate thermalization during boiling in water saturated porous matrix. Lioumbas, J. S.; Karapantsios, T. D. EXPERIMENTAL THERMAL AND FLUID SCIENCE, 67SI, 75-80, OCT 2015. https://doi.org/10.1016/j.expthermflusci.2015.01.011
- Effect of increased gravitational acceleration in potato deep-fat frying. Lioumbas, John S.; Karapantsios, Thodoris D. FOOD RESEARCH INTERNATIONAL, 55, 110-118, JAN 2014 https://doi.org/10.1016/j.foodres.2013.10.044.
- Hypergravity to Explore the Role of Buoyancy in Boiling in Porous Media. Lioumbas, John S.; Krause, Jutta; Karapantsios, Thodoris D. MICROGRAVITY SCIENCE AND TECHNOLOGY, 25/1, 17-25, Febr 2013. https://doi.org/10.1007/s12217-012-9323-8
- Ciofani, G., Ricotti, L., Rigosa, J., Menciassi, A., Mattoli, V., & Monici, M. (2012). Hypergravity effects on myoblast proliferation and differentiation. Journal of bioscience and bioengineering, 113(2), 258-261. https://doi.org/10.1016/j.jbiosc.2011.09.025
- Manzano, A. I., Herranz, R., van Loon, J. J. W. A., & Medina, F. J. (2012). A Hypergravity Environment Induced by Centrifugation Alters Plant Cell Proliferation and Growth in an Opposite Way to Microgravity. Microgravity science and technology, 24(6), 373-381. doi:10.1007/s12217-012-9301-1.
- Gibbings A, Vasile M. Impact cratering experiments into highly porous bodies. IAA Planetary Defense Conference, Protecting Earth from Asteroids: From threat to Action, 2011. Link PDF.
- Eiden A, Giannopapa C, Toth B, Dowson A. Bubble Formation and Behaviour Under Hypergravity Conditions. Pressure Vessels and Piping Conference, 2010. 665-672. https://doi.org/10.1115/PVP2010-26148.