

Publications Rang A – période 2020-2025

21 publiées ou acceptées, 3 en révision, 2 soumises

Geethakumari, G. P., A. T. Aikio, L. Cai, H. Vanhamäki, I. I. Virtanen, A. Coster, A. Maute, **A. Marchaudon**, P.-L. Blelly, Role of Large-Scale Traveling Ionospheric Disturbances in the Positive Storm Phase Observed by the Millstone Hill Radar and GNSS TEC Measurements, soumis à *Journal of Geophysical Research: Space Physics*, 2025.

Nakamura, R., T. Dudok de Wit, G. H. Jones, M. G. G. Taylor et al., Establishing a European Heliophysics Community (EHC), soumis à *Ann. Geophys.*, 2025
<https://egusphere.copernicus.org/preprints/2025/egusphere-2025-3814> .

Gallardo-Lacourt, B., M. Grandin, **A. Marchaudon**, M. Barthélémy, Unresolved Questions in Subauroral Science: Exploring Key Challenges in Physics and Chemistry, soumis à *Surveys in Geophysics*, 2025. *Workshop ISSI "Physical Links Between Weather and Climate in Space and the Lower Atmosphere"*.

Laundal, K. M., **A. Marchaudon**, A. Maute, S. M. Hatch, F. Enengl, T. Matsuo, M. Decotte, M. Madelaire, V. G. Merkin, A. Sciola, V. Haberle, A. S. Skeidsvoll, Next generation data assimilation methods for polar ionospheric electrodynamics, en révision à *Surveys in Geophysics*, 2025. *Workshop ISSI "Physical Links Between Weather and Climate in Space and the Lower Atmosphere"*.

Resseguier, A., P.-L. Blelly, **A. Marchaudon**, A new geomagnetic coordinate system: the Generalized Eccentric Dipole, en révision à *Journal of Geophysical Research: Space Physics*, 2025.

Harvey, V. L., D. Aggarwal, E. Becker, M. Bittner, B. Funke, L. Goncharenko, J. Jia, R. Lieberman, H.-L. Liu, V. Maliniemi, **A. Marchaudon**, H. Nesse, N. Partamies, N. Pedatella, C. Schmidt, G. Shi, C. Stephan, G. Stober, W. Van Cappel, S. Wuest, Y. Yamazaki (2025), Signatures of Polar Vortex Weakening in the MLTI: A Review, *Survey Geophysics*, <https://doi.org/10.1007/s10712-025-09899-3>. *Workshop ISSI "Physical Links Between Weather and Climate in Space and the Lower Atmosphere"*.

Santerne A. H. Meheut, D. Barret, O. Berné, E. Berthier, A. Ducharne, J. Knödlseider, **A. Marchaudon**, T. Pellarin, A. Spiga, P. Wolf (2025), Towards sustainable space research in France, soumis à *Nature Astronomy, Correspondence*, <https://doi.org/10.1038/s41550-025-02506-w>.

Kieokaew, R., V. Haberle, **A. Marchaudon**, A. Chambodut, P.-L. Blelly (2025), Neural network modeling of geomagnetic baseline for ground magnetic measurements at mid-latitude, *Space Weather*, 23, e2024SW004192, <https://doi.org/10.1029/2024SW004192>.

Wahlund, JE., J.E.S. Bergman, L. Åhlén, et al. (2025), The Radio & Plasma Wave Investigation (RPWI) for the JUper ICy moons Explorer (JUICE). *Space Sci Rev* 221, 1, <https://doi.org/10.1007/s11214-024-01110-0>

Belehaki A., I. Häggström et al. (2025), PITHIA-NRF, Integrating plasmasphere, ionosphere and thermosphere observations and models into a standardised open access research environment: The PITHIA-NRF international project, *Advances in Space Research*, Volume 75, Issue 3, Pages 3082-3114, <https://doi.org/10.1016/j.asr.2024.11.065>.

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly (2024), An Operational Geomagnetic Baseline Derivation Method for Magnetic Observatories located in Mid-Latitudes, *Space Weather*, 22, e2024SW004048, <https://doi.org/10.1029/2024SW004048>

Geethakumari G. P., A. T. Aikio, L. Cai, H. Vanhamäki, I. I. Virtanen, A. Coster, **A. Marchaudon**, P.-L. Blelly, A. Maute, J. Norberg, S. Oyama, Y. Zhang, S. Chakraborty and B. Kunduri (2024), Total electron content variations during an HSS/SIR-driven geomagnetic storm at high and mid-latitudes, *Journal of Geophysical Research: Space Physics*, 129, e2024JA033192, <https://doi.org/10.1029/2024JA033192>

Ellahouny, N. M., A. Aikio, H. Vanhamäki, I. Virtanen, L. Cai, **A. Marchaudon**, P.-L. Blelly, A. Coster, J. Norberg, A. Maute, S.-I. Oyama (2024), EISCAT observations of depleted high-latitude F-region 2 during

an HSS/SIR-driven magnetic storm, *Journal of Geophysical Research: Space Physics*, 129, e2024JA032910, <https://doi.org/10.1029/2024JA032910>.

Sarris T. E., Tourgaidis S., et al. (2023), Daedalus MASE (mission assessment through simulation exercise): A toolset for analysis of in situ missions and for processing global circulation model outputs in the lower thermosphere-ionosphere., *Front. Astron. Space Sci.*, 9:1048318, <https://doi.org/10.3389/fspas.2022.1048318>.

Dahani S., R. Kieokaew, V. Génot, B. Lavraud, Y. Chen, B. M. de Welle, N. Aunai, G. Toth, P. Cassak, N. Fargette, R. C. Fear, **A. Marchaudon**, D. Gershman, B. Giles, R. Torbert, and J. Burch (2022), The Helicity Sign of Flux Transfer Event Flux Ropes and its Relationship to the Guide Field and Hall Physics in Magnetic Reconnection at the Magnetopause, *Journal of Geophysical Research: Space Physics*, e2022JA030686. <https://doi.org/10.1029/2022JA030686>.

Rae, J., Forsyth, C. et al. (2022), What are the fundamental modes of energy transfer and partitioning in the coupled Magnetosphere-Ionosphere system?, *Experimental Astronomy*, Volume 54, pages 391–426, <https://doi.org/10.1007/s10686-022-09861-w>

Berngardt, O. I., St- Maurice, J.-P., Ruohoniemi, J. M., & **Marchaudon, A.** (2022). Seasonal and diurnal dynamics of radio noise for 8–20 MHz poleward-oriented mid-latitude radars. *Radio Science*, 57, e2021RS007338. <https://doi.org/10.1029/2021RS007338>.

Haberle, V., **Marchaudon, A.**, Chambodut, A., & Blelly, P.-L. (2022), Direct determination of geomagnetic baselines during quiet periods for low and mid-latitude observatories. *Journal of Geophysical Research: Space Physics*, 127, e2022JA030407. <https://doi.org/10.1029/2022JA030407>.

Wang, Y., M. Blanc et al. (2021), A preliminary study of Magnetosphere-Ionosphere-Thermosphere coupling at Jupiter: Juno multi-instrument measurements and modelling tools, *J. Geophys. Res. Space Physics*, <https://doi.org/10.1029/2021JA029469>.

Marcucci, M. F., I. Coco, S. Massetti, A. Pignalberi, V. Forsythe, M. Pezzopane, A. Koustov, S. Longo, D. Biondi, E. Simeoli, G. Consolini, M. Laurenza, **A. Marchaudon**, A. Satta, A. Cirioni, A. De Simone, A. Olivieri, A. Bau, A. Salvati (2021), Echo occurrence in the southern polar ionosphere for the SuperDARN Dome C East and Dome C North radars, *Polar Science*, 28, <https://doi.org/10.1016/j.polar.2021.100684>.

Chisham, G., A. G. Burrell, **A. Marchaudon**, S. G. Shepherd, E. G. Thomas, P. Ponomarenko (2021), Improving the geopositioning of SuperDARN echoes through interferometer calibration, *Polar Science*, 28, <https://doi.org/10.1016/j.polar.2021.100638>.

Palmroth, M., Grandin, M., Sarris, T., Doornbos, E., Tourgaidis, S., Aikio, A., Buchert, S., Clilverd, M., Dandouras, I., Heelis, R., Hoffmann, A., Ivchenko, N., Kervalishvili, G., Knudsen, D., Kotova, A., Liu, H.-L., Malaspina, D., March, G., **Marchaudon, A.**, Marghitu, O., Matsuo, T., Miloch, W., Moretto-Jørgensen, T., Mpaloukidis, D., Olsen, N., Papadakis, K., Pfaff, R., Pirnaris, P., Siemes, C., Stolle, C., Suni, J., van den Ijssel, J., Verronen, P.T., Visser, P., and Yamauchi, M. (2021), Lower thermosphere - ionosphere (LTI) quantities: Current status of measuring techniques and models, *Ann. Geophys.*, <https://doi.org/10.5194/angeo-2020-42>.

Kieokaew R., B. Lavraud, N. Fargette, **A. Marchaudon**, V. Génot, C. Jacquy, D. Gershman, B. Giles, R. Torbert, J. Burch (2021), Statistical Relationship between Interplanetary Magnetic Field Conditions and the Helicity Sign of Flux Transfer Event Flux Ropes, *Geophys. Res. Lett.*, <https://doi.org/10.1029/2020GL091257>.

Pitout, F., **A. Marchaudon**, K. Trattner, J. Berchem, H. Laakso, C. P. Escoubet (2020), Simultaneous Polar and Cluster observations in the northern and southern mid-altitude polar cusps around equinox, *J. Geophys. Res. Space Physics*, <https://doi.org/10.1029/2020JA028346>.

Poedts S. et al., EUropean Heliospheric FORecasting Information Asset 2.0 (2020), *Journal of Space Weather and Space Climate*, 10, 57, <https://doi.org/10.1051/swsc/2020055>.

Marchaudon, A. and P.-L. Blelly (2020), Impact of the dipole tilt angle on the ionospheric plasma as modeled with IPIM, *J. Geophys. Res. Space Physics*, 125, <https://doi.org/10.1029/2019JA027672>.

Conférences invitées – période 2020-2025

Marchaudon A., How can the effects of the middle atmosphere be taken into account to model the ionosphere accurately?, *ISSI Workshop “Physical Links Between Weather and Climate in Space and the Lower Atmosphere”*, Berne, Suisse, Janvier 2024.

Marchaudon, A., Ground-based efforts toward a better description of the ionosphere-thermosphere system and a better assimilation of data in first-principle models, *Royal Astronomical Society’s Specialist Discussion Meeting Global Monitoring of Geospace*, Meeting en ligne, Janvier 2022.

Marchaudon, A., Overview of the equatorial electrodynamics at Earth, *Royal Astronomical Society Meeting: Comparative Equatorial Thermosphere-Ionosphere-Magnetosphere*, Meeting en ligne, Février 2021.

Publications sans comité de lecture – 2020-2025

Marchaudon, A., and P.-L. Blelly (2024), Understanding the near-Earth space environment: a challenge for both solar-terrestrial relations and coupling with the lower atmosphere, SF2A-2024: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics. Eds.: M. Béthermin, K. Baillié, N. Lagarde, J. Malzac, R.-M. Ouazzani, J. Richard, O. Venot, A. Siebert (eds), meeting à Marseille, France, 4-7 Juin 2024, p. 27-32 <https://ui.adsabs.harvard.edu/abs/2024sf2a.conf...27M>.

Sarris, T., et al. (2023), Plasma-Neutral Interactions in the Lower Thermosphere-Ionosphere: The need for in situ measurements to address focused questions, *Whitepaper #351 in the Decadal Survey for Solar and Space Physics (Heliophysics) 2024-2033*. Main topics: basic research. Additional topics: planetary ionospheres/upper atmospheres; space-based missions/projects, <https://doi.org/10.3847/25c2cfef.ad2e5fe9>.

Rae, J. et al. (2020), What are the fundamental modes of energy transfer and partitioning in the coupled Magnetosphere-Ionosphere system?, *European Space Agency’s “Call for White Papers for the Voyage 2050 long-term plan in the ESA Science Programme”*.

Communications nationales et internationales (1^{ère} autrice) – 2020-2025

Marchaudon, A., Comprendre l’environnement spatial proche de la Terre : enjeu aussi bien pour les relations Soleil-Terre que pour les couplages avec la basse atmosphère, *Session plénière du Colloque de la SF2A*, Marseille, France, Juin 2024.

Marchaudon, A., P.-L. Blelly, F. Pitout, J. Eisenbeis, S. Thomas, Importance de la composante thermosphérique dans la dynamique du couplage ionosphère-magnétosphère : impact pour la Météorologie de l’Espace, *Colloque du PNST*, Marseille, France, Mai 2022.

Marchaudon, A., P.-L. Blelly, F. Pitout, L. Noguès, H.C. Séran, L. Bautista, A. Resseguier, Installations ionosphériques HF françaises : état du radar SuperDARN de Kerguelen et installation d’une ionosonde au Centre de Recherche Atmosphérique de Lannemezan, *Colloque de prospective du PNST*, Marseille, France, Janvier 2024. (poster)

Marchaudon A., P.-L. Blelly, A. Aikio, A. Maute, S. Thomas, J. Eisenbeis, Applications du modèle IPIM aux événements intenses : éjections de masse coronale (CME) et régions d'interaction en corotation (CIR), *Colloque de prospective du PNST*, Marseille, France, Janvier 2024. (poster)

Marchaudon, A., P.-L. Blelly, F. Pitout, L. Noguès, H.C. Séran, L. Bautista, A. Resseguier, French HF ionospheric facilities: SuperDARN radar and Ionosonde, *European Space Weather Week 2023*, Toulouse, Novembre, 2023. (poster)

Communications internationales (jeunes chercheurs encadrés) – 2020-2025

Resseguier, A., P.-L. Blelly, A. Marchaudon, Implementation of a low and mid-latitudes electrodynamical module in the IRAP Plasmasphere-Ionosphere Model (IPIM), *EGU General Assembly 2024*, Vienne, Autriche, Avril 2025. (poster)

Haberle, V., **Marchaudon, A.**, Chambodut, A., and Blelly, P.-L.: An operational geomagnetic baseline derivation for ground magnetometer data located in mid-latitudinal regions, *EGU General Assembly 2024*, Vienne, Autriche, Avril 2024. (poster)

Kieokaew, R., V. Haberle, **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Neural network modeling of the ground magnetic perturbation at mid-latitude: towards future application of geomagnetic storm prediction, *European Space Weather Week 2023*, Toulouse, Novembre 2023.

Haberle, V., **Marchaudon, A.**, Chambodut, A., and Blelly, P.-L.: Extraction of solar forcing signatures in ground magnetometer data from sub-auroral regions, *EGU General Assembly 2023*, Vienne, Autriche, Avril 2023. (poster)

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Extraction of ground magnetic signatures from solar quiet current systems in sub-auroral regions, *EGU General Assembly*, Avril 2022.

Eisenbeis, J., P.-L. Blelly, S. R. Thomas, **A. Marchaudon**, Modeling horizontal currents and magnetic ground perturbations with the IPIM model, *EGU General Assembly*, Avril 2022.

Thomas, S. R., S. Bird, P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, Using IPIM to Simulate the Ionosphere's Response to Extreme Space Weather, *EGU General Assembly*, Avril 2022.

Eisenbeis, J., P.-L. Blelly, S. R. Thomas, **A. Marchaudon**, Modeling horizontal currents and ground induced currents with the IPIM model, *AGU Fall Meeting*, Décembre 2021.

Thomas, S. R., P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, S. Bird, Applying Solar Wind Observations to the IPIM Ionospheric Model, *AGU Fall Meeting*, Décembre 2021.

Haberle, V., **A. Marchaudon**, A. Chambodut, P.-L. Blelly, Local diurnal variations of the geomagnetic field during magnetically quiet conditions, *EGU General Assembly*, Avril 2021.

Thomas, S. R., P.-L. Blelly, **A. Marchaudon**, J. Eisenbeis, S. Bird, Applying Solar Wind Observations to the IPIM Ionospheric Model, *EGU General Assembly*, Avril 2021.