Publications as first author: 9 published

1. **Bertrand, T.**, Lellouch, E., Holler, B. J., Young, L. A., Schmitt, B., Oliveira, J. M., ... & Cruikshank, D. P. **(2022b)**. Volatile transport modeling on Triton with new observational constraints. ***Icarus***, *373*, 114764.
2. **Bertrand, T.**, Kahre, M. A., Urata, R., Määttänen, A., Montmessin, F., Wilson, R. J., & Wolff, M. J. **(2022a)**. Impact of the coagulation of dust particles on Mars during the 2018 global dust storm. ***Icarus***, *388*, 115239.
3. **Bertrand, T.**, Forget, F., Schmitt, B., White, O. L., Grundy, W. M., **(2020c)**. Equatorial mountains on Pluto are covered by methane frosts resulting from a unique atmospheric process. ***Nature Communications***, Vol. 11., 5056.
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5. **Bertrand, T.**, Forget, F., White, O., Schmitt, B., Stern, S. A., Weaver, H., Young, L. A., Ennico, K., Olkin and C. B. Olkin, **(2020a)**. Pluto's beating heart regulates the atmospheric circulation: Results from high-resolution and multiyear numerical climate simulations. ***JGR (Planets)***, 125, e2019JE006120.
6. **Bertrand, T.**, Forget, F., Umurhan, O. M., Moore, J. M., Young, L. A., Protopapa, S., Grundy, W. M., Schmitt, B., Dhingra, R. D., Binzel, R. P., Earle, A. M., Cruikshank, D. P., Stern, A., Weaver, H. A., Young, L. A., Ennico, K. and Olkin, C. B., **(2019a)**. The CH_4 cycles on Pluto over seasonal and astronomical timescales. ***Icarus****, 329, 148-165.*
7. **Bertrand, T.,** Forget, F., Grundy, W., M., Schmitt, B., Zangari, A., M., Umurhan, O., M., White, O., L., Schenk, P., M., Singer, K., N., Stern, A., Weaver, H., A., Young, L., A., Ennico K., Olkin C., B., and the New Horizons Science Team, **(2018)**. The N_2 cycles on Pluto over seasonal and astronomical timescales. ***Icarus****, 309, 277-296.*
8. **Bertrand, T.** and Forget, F., **(2017)**. 3D modeling of organic haze in Pluto's atmosphere. ***Icarus***, 287, 72–86.
9. **Bertrand, T.** and Forget, F., **(2016)**. Observed glacier and volatile distribution on Pluto from atmosphere-topography processes. ***Nature***, 540, 86-89.

Publications as co-author: 32 published

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1. Munguira, A., … including **Bertrand, T.**, et al. **(2023)**. Near surface atmospheric temperatures at Jezero from Mars 2020 MEDA measurements. ***Journal of Geophysical Research: Planets***, *128*(3), e2022JE007559.
2. Mandon, L., … including **Bertrand, T.**, et al. **(2023)**. Reflectance of Jezero crater floor: 2. Mineralogical interpretation. ***Journal of Geophysical Research: Planets***, e2022JE007450.
3. Kahre, M. A., Haberle, R. M., Wilson, R. J., Urata, … including **Bertrand, T.**, et al. **(2023)**. The NASA Ames legacy Mars global climate model: Radiation code error correction and new baseline water cycle simulation. ***Icarus***, *400*, 115561.
4. Sánchez-Lavega, A., del Rio-Gaztelurrutia, T., Hueso, R., … including **Bertrand, T.**, et al. **(2023)**. Mars 2020 Perseverance rover studies of the Martian atmosphere over Jezero from pressure measurements. ***Journal of Geophysical Research: Planets***, *128*(1), e2022JE007480.
5. Chide, B., Jacob, X., Petculescu, A., Lorenz, R. D., Maurice, S., … including **Bertrand, T.**, et al. **(2023)**. Measurements of sound propagation in Mars' lower atmosphere. ***Earth and Planetary Science Letters***, *615*, 118200.
6. Vicente-Retortillo, A., Martínez, G. M., Lemmon, M. T., … including **Bertrand, T.**, et al. **(2023)**. Dust lifting through surface albedo changes at Jezero crater, Mars. ***Journal of Geophysical Research: Planets***, *128*(4), e2022JE007672.
7. Stott, A. E., Murdoch, N., Gillier, M., Banfield, D., **Bertrand, T.**, Chide, B., ... & Mimoun, D. **(2023)**. Wind and turbulence observations with the Mars microphone on Perseverance. ***Journal of Geophysical Research: Planets***, *128*(5), e2022JE007547.
8. Lorenz, R. D., Maurice, S., Chide, B., Mimoun, … including **Bertrand, T.**, et al. **(2023)**. The sounds of a helicopter on Mars. ***Planetary and Space Science***, *230*, 105684.
9. Batterson, C. M., Kahre, M. A., Bridger, A. F., Wilson, R. J., Urata, R. A., & **Bertrand, T.** **(2023)**. Modeling the "B" regional dust storm on Mars: Dust lofting mechanisms predicted by the new NASA Ames Mars GCM. ***Icarus***, *400*, 115542.

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10. Wiens, R. C., Udry, A., Beyssac, O., Quantin-Nataf, C., Mangold, N., Cousin, A., … including **Bertrand T.** & SuperCam Team. **(2022)**. Compositionally and density stratified igneous terrain in Jezero crater, Mars. ***Science advances***, *8*(34), eabo3399.
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12. Newman, C. E., Hueso, R., Lemmon, M. T., Munguira, A., Vicente-Retortillo, Á., Apestigue, V., including **Bertrand T. (2022)**. The dynamic atmospheric and aeolian environment of Jezero crater, Mars. ***Science Advances***, *8*(21), eabn3783.
13. Lemmon, M. T., Smith, M. D., Viudez-Moreiras, D., de la Torre-Juarez, M., Vicente-Retortillo, A., Munguira, A., including **Bertrand, T. (2022)**. Dust, Sand, and Winds Within an Active Martian Storm in Jezero Crater. ***Geophysical research letters***, *49*(17), e2022GL100126.
14. Murdoch, N., Stott, A. E., Gillier, M., Hueso, … including **Bertrand, T.**, et al. **(2022)**. The sound of a Martian dust devil. ***Nature Communications***, *13*(1), 7505.
15. Chide, B., **Bertrand, T.**, Lorenz, R. D., Munguira, A., Hueso, R., Sánchez-Lavega, A., ... & Wiens, R. C. **(2022)**. Acoustics reveals short-term air temperature fluctuations near Mars' surface. ***Geophysical Research Letters***, *49*(21), e2022GL100333.
16. Smith, M. D., Badri, K., Atwood, S. A., Edwards, C. S., Christensen, P. R., Wolff, M. J., … including **Bertrand T. (2022)**. EMIRS Observations of the Aphelion-Season Mars Atmosphere. ***Geophysical Research Letters*, *49*(15)**, e2022GL099636.
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18. Maurice, S., Chide, B., Murdoch, N., Lorenz, R. D., Mimoun, D., Wiens, R. C., Stott, A., Jacob, X., **Bertrand, T.** ... & Williford, K. **(2022)**. In situ recording of Mars soundscape. ***Nature***, *605*(7911), 653-658.
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20. Oliveira, J. M., Sicardy, B., Gomes-Júnior, A. R., Ortiz, J. L., Strobel, D. F., **Bertrand, T.**, ... & Erpelding, D. **(2022)**. Constraints on the structure and seasonal variations of Triton's atmosphere from the 5 October 2017 stellar occultation and previous observations. ***Astronomy & Astrophysics***, *659*, A136.

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21. Fayolle, M., Quirico, E., Schmitt, B., Jovanovic, L., Gautier, T., Carrasco, N., including **Bertrand, T.** & Stern, A. **(2021)**. Testing tholins as analogues of the dark reddish material covering Pluto's Cthulhu region. ***Icarus***, *367*, 114574.
22. Schenk, P. M., Beddingfield, C. B., **Bertrand, T.**, Bierson, C., Beyer, R., Bray, V. J., ... & Stryk, T. **(2021)**. Triton: Topography and Geology of a Probable Ocean World with Comparison to Pluto and Charon. ***Remote Sensing***, *13*(17), 3476.
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24. Wan, L., Zhang, X., & **Bertrand, T. (2021)**. Effects of Haze Radiation and Eddy Heat Transport on the Thermal Structure of Pluto's Lower Atmosphere. ***The Astrophysical Journal***, *922*(2), 244.
25. Newman, C. E., de la Torre Juárez, M., Pla-García, J., Wilson, R. J., Lewis, S. R., Neary, L., Kahre, M. A., Forget, F., Spiga, A., Richardson, M. I., Daerden, F., **Bertrand, T.**, Viúdez-Moreiras, D., Sullivan, R., Sánchez-Lavega, A., Chide, B., & Rodriguez-Manfredi, J. A., **(2021)**. Multi-model Meteorological and Aeolian Predictions for Mars 2020 and the Jezero Crater Region. ***Space Science Review***, 217, 20.
26. Cruikshank, D. P., Dalle Ore, C. M., Scipioni, F., Beyer, R. A., White, O. L., Moore, J. M., Grundy, W. M., Schmitt, B., Runyon, K. D., Keane, J. T., Robbins, S. J., Stern, S. A., **Bertrand, T.**, Beddingfield, C. B., Olkin, C. B., Young, L. A., Weaver, H. A., & Ennico, K., **(2021)**. Cryovolcanic flooding in Viking Terra on Pluto. ***Icarus***, 356, 113786.
27. Jacobs, A. D., Summers, M. E., Cheng, A. F., Gladstone, G. R., Lisse, C. M., Pesnell, W. D., **Bertrand, T.**, Strobel, D. F., Young, L. A., Weaver, H. A., Kammer, J., & Gao, P., **(2021)**. LORRI observations of waves in Pluto's atmosphere. ***Icarus***, 356, 113825.
28. Gabasova, L. R., Schmitt, B., Grundy, W., **Bertrand, T.**, Olkin, C. B., Spencer, J. R., Young, L. A., Ennico, K., Weaver, H. A., Stern, S. A., & New Horizons Composition Team, **(2021)**. Global compositional

cartography of Pluto from intensity-based registration of LEISA data. ***Icarus***, 356, 113833.

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31. Scipioni, F., White, O., Cook, J. C., **Bertrand, T.**, Cruikshank, D. P., Grundy, W. M., Beddingfield-Cartwright, C., Binzel, R. P., Dalle Ore, C. M., Jennings, D., Moore, J. M., Olkin, C. B., Protopapa, S., Reuter, D. C., Schmitt, B., Singer, K. N., Spencer, J. R., Stern, S. A., Weaver, H. A., Verbiscer, A. J., & Young, L. A., (**2021**). Pluto's Sputnik Planitia: Composition of geological units from infrared spectroscopy. ***Icarus***, 359, 114303.
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33. Cruikshank, D. P. and 17 co-authors, including **Bertrand, T.**, (**2020**). Cryovolcanic Flooding in Viking Terra on Pluto. ***Icarus.***
34. Cruikshank, D. P. and 28 co-authors, including **Bertrand, T.**, (**2019**). Recent cryovolcanism in Virgil Fossae on Pluto. ***Icarus***, 330, 155-168.
35. Meza, E. and 166 co-authors, including **Bertrand, T.**, (**2019**). Pluto's lower atmosphere and pressure evolution from ground-based stellar occultations, 1988-2016. ***Astronomy & Astrophysics****, Volume 625.*
36. White, O. L., Moore, J. M., Howard, A. D., McKinnon, W. B., Keane, J. T., Singer, K. N., **Bertrand, T.**, Robbins, S. J., Schenk, P. M., Schmitt, B., Buratti, B. J., Stern, S. A., Ennico, K., Olkin, C. B., Weaver, H. A., and Young, L. A., (**2019**). Washboard and fluted terrains on Pluto as evidence for ancient glaciation. ***Nature Astronomy****, 3, 62-68.*
37. Nishikawa, Y., Lognonné, P., Kawamura, T., Spiga, A., Stutzmann, E., Schimmel, M., **Bertrand, T.**, Forget, F., and Kurita, K. (**2019**). Mars' Background Free Oscillations. ***Space Science Reviews****, 215, 13, 26.*
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39. Moore, J. M., Howard, A. D., Umurhan, O. M., White, O. L., Schenk, P. M., Beyer, R. A., McKinnon,W. B., Spencer, J. R., Singer, K., Grundy, W. M., Earle, A. M., Schmitt, B., Protopapa, S., Nimmo, F., Young, L. A., Stern, S. A., Weaver, H. A., Olkin, C. B., Ennico, K., Collins G., **Bertrand, T.**, Forget, F. and the New Horizons Science Team, (**2018**). Bladed terrain on Pluto: Possible origins and evolution. ***Icarus****, 300, 129–144.*
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42. Wang, C, Forget, F., **Bertrand, T.**, Spiga, A., Millour, E. and Navarro, T., (**2018**). Parameterization of rocket dust storms on Mars in the LMD Martian GCM: modeling details and validation. ***JGR Planets****, 123-4, 982-1000.*
43. Forget, F., **Bertrand, T.**, Vangvichith, M., Leconte, J., Millour M. and Lellouch E., (**2017**). A post-New Horizons Global climate model of Pluto including the N2, CH4 and CO cycles. ***Icarus***, 287, 54-71.
44. White, O., L., Moore, J., M., McKinnon, W., B., Spencer, J., R., Howard, A., D., Schenk, P., M.,Beyer, R., A., Nimmo, F., Singer, K., N., Umurhan, O., M., Stern, S., A., Ennico, K., Olkin, C., B.,Weaver, H., A., Young,

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Book chapters : 3 (Pluto) + 1 (Mars) as co-author

3 chapters of the scientific book « Pluto System After New Horizons » (2021), in the Lunar and Planetary Institute Press:

- Young, A. L., **Bertrand, T.**, Trafton, L., Forget, F., Earle, A., Sicardy, B. "Volatile and Climate Cycles on Short and Long Timescales"
- McKinnon, W. B., Glein, C. R., **Bertrand, T.** and Rhoden, A. "Formation, Composition, and History of the Pluto System: A Post-*New-Horizons* Synthesis"
- Forget, F., **Bertrand, T.**, Hinson, D., Toigo, A. "Dynamics of Pluto's Atmosphere"

1 chapter of the scientific book « Treatise on Geomorphology » (2021):

- Newman, C. E., **Bertrand, T.**, Fenton, L. K., Guzewich, S. D., Jackson, B., Lewis, S., ... & Wellington, D. "Martian Dust".

White papers

White Papers submitted to the Planetary Science and Astrobiology Decadal Survey 2023-2032:

- Newman, C and **Bertrand, T.,** et al., 2020. "Toward More Realistic Simulation and Prediction of Dust Storms on Mars".
- Guzewich, S. et al., including **Bertrand, T.,** 2020. "Measuring Mars Atmospheric Winds From Orbit".
- Montabone, L., et al., including **Bertrand, T.,** 2020. "Observing Mars from Areostationary Orbit: Benefits and Applications".

Technical notes for the InSight and ExoMars missions

A. Technical Notes for InSight Landing Site Characterization Studies

T1-T3. **Bertrand, T.**, Forget, F., Spiga, A., and Millour, E. 2013. "Mars Atmospheric Mesoscale Simulation Results: Winds at InSight landing Site". References: LMD-INS-TNO-01, LMD-INS-TNO-02, LMD-INS-TNO-03.

B. Technical Notes for ExoMars Landing Site Characterization Studies

T4. **Bertrand, T.**, Spiga, A., Forget, F., and Millour, E., 2013. "Summary of ExoMars Landing Site Characterization Studies". Reference: EXM-MS-TNO-LMD-0091.

T5-T6. **Bertrand, T.**, and Spiga, A., 2013. "LMD - SwRI LES Models Intercomparison for ExoMars Landing Site Characterization". Reference: EXM-MS-TNO-LMD-0084, EXM-MS-TNO-LMD-0085.

T7-T9. **Bertrand, T.**, and Spiga, A., 2013. "LMD - SwRI Mesoscale Models Intercomparison for ExoMars Landing Site Characterization". Reference: EXM-MS-TNO-LMD-0081, EXM-MS-TNO-LMD-0082, EXM-MS-TNO-LMD-0083.

T10. **Bertrand, T.**, Spiga, A., and Colaitis, A., 2012. "Analysis of wind shear for the ExoMars mission using ultra-high resolution Large Eddy Simulations (LES)". Reference: EXM-MS-TNO-LMD-0071.

Presentations at conferences as first author

1. **Bertrand, T.**, Wolff, M., Connour, K., McConnochie, T., Fouchet, T., Montmessin, F., & Knutsen, E. W. Retrieval of Aerosol Properties at Jezero Crater using the Supercam Instrument on-board the Nasa Mars 2020 Perseverance Rover. **MAMO 2022**, Paris.
2. **Bertrand, T.** Volatile transport modeling on Triton and comparisons to Pluto, **PNP 2022,** Lyon.
3. **Bertrand, T.** New observations and modeling studies of Pluto's atmosphere and ices, **SF2A 2021**.
4. **Bertrand, T.**, Kahre, M., Urata, R., Wilson, J., Kling, A., & Wolff, M. Exploring the impact of bi-modal dust particle size distributions on the present-day Martian climate with the 3D NASA Ames Mars Global Climate Model. **EPSC 2021**.
5. **Bertrand, T.**, Kahre, M., Wilson, J., Wolff, M., Haberle, R. M., Montmessin, F., Urata, R., Hartwick, V., Kling, A., Brecht, A., Steakley, K., & Batterson, C., 2020. Investigating changes in dust particles size in the Martian atmosphere during Global Dust Storms with the NASA Ames Global Climate Model. **AGU Fall Meeting 2020**.

6. **Bertrand, T.**, Kahre, M., Wilson, J., Wolff, M., Haberle, R. M., Montmessin, F., Urata, R., Hartwick, V., Kling, A., Brecht, A., Steakley, K., & Batterson, C., 2020. Exploring changes in dust particles size distribution on Mars during 2018 Global Dust Storm with a 3D Global Climate Model. European Planetary Science Congress, **EPSC 2020**-518.
7. **Bertrand, T.,** Forget, F., Schmitt, B. and White, O. "How Seasonal Methane Snow Forms on Pluto on Mountain Tops, Crater Rims and Slopes", **AGU 2019**, San Francisco.
8. **Bertrand, T.** and Forget, F. Elevation-dependant CH4 condensation on Pluto: what are the origins of the observed CH4 snow-capped mountains? **EPSC-DPS** 2019, Geneva (Oral).
9. **Bertrand, T.**, Wilson, J., and Kahre, M. Simulation of the 2018 Global Dust Storm on Mars using the NASA Ames Mars GCM: a multi-tracer approach. **EPSC-DPS** 2019, Geneva (Oral).
10. **Bertrand, T.**, Forget, F., Sicardy, B., Marques Oliveira, J., Merlin, F., and Lellouch, E. Climate modeling on Triton with a hierarchy of models. **EPSC-DPS** 2019, Geneva (Poster).
11. **Présentation invitée: Bertrand, T.**, Forget, F., Toigo, A., and Hinson, D. Pluto's Atmosphere Dynamics: How the Nitrogen Heart Regulates the Circulation. **Pluto System After New Horizons**, 2019, JHUAPL, Laurel (Oral).
12. **Bertrand, T.**, Wilson, R. J., and Kahre, M. A. Simulation of the 2018 Global Dust Storm on Mars Using the NASA Ames Mars GCM: A Multi-Tracer Approach. **9th Mars Conférence**, 2019, Pasadena (Oral).
13. **Bertrand, T.**, Kahre, M. A., and Wilson, R. J. Tagging Dust and Water in the NASA Ames Mars GCM : a New Global Vision of the Current and Past Martian Climates. **AGU** 2018, Washington (Oral).
14. **Bertrand, T.** Numerical Modeling of Pluto's glaciers, frosts and atmosphere to interpret New Horizons observations, **PNP 2018**, Nice.
15. **Bertrand, T.**, Kahre, M., Wilson, J., and Kling, A. Tagging dust and water in the NASA Ames Mars GCM: a new global vision of the Martian climate. **EPSC** 2018, Berlin (Oral).
16. **Bertrand, T.** and Forget, F. High resolution 3D global climate modelling of Pluto's atmosphere to interpret New Horizons observations. **EPSC** 2018, Berlin (Oral).
17. **Bertrand, T.**, Forget, F., Sicardy, B., and Lellouch, E. Investigating the surface distribution of N2, CH4 and CO ices on Triton with a volatile transport model. **EPSC** 2018, Berlin (Poster).
18. **Bertrand, T.**, Kahre, M. A., Wilson, R. J., and Kling, A. Tagging Dust and Water in the NASA Ames Mars GCM: A New Global Vision of the Martian Climate. **Mars Workshop: Amazonian and Present Day Climate**, 2018, Boulder (Oral).
19. **Bertrand, T.**, Forget, F., and New Horizons Science Team. High resolution 3D global climate modeling of Pluto's atmosphere to interpret New Horizons observations. **DPS** 2017, Salt Lake City (Oral).
20. **Bertrand, T.** and Forget, F. Investigating the present and past glacial and frost activity on Pluto with a volatile transport model. **DPS-EPSC** 2016, Pasadena (Oral).
21. **Bertrand, T.** and Forget, F. A 3D Global Climate Model of the Pluto atmosphere coupled to a volatile transport model to interpret New Horizons observations, including the N2, CH4 and CO cycles and the formation of organic hazes. **EGU** 2016, Vienna (Oral).
22. **Bertrand, T.** and Forget, F. Modeling the seasonal evolution of the surface distribution of N2, CH4 and CO ices on Pluto to interpret New Horizons observations. **DPS** 2015, Washington (Poster).
23. **Présentation invitée: Bertrand, T.**, Spiga, A., and Forget, F. What Are the Origins of Detached Layers of Dust on Mars ? Investigation with Global Climate Model. AGU 2014, San Francisco (Oral).
24. **Bertrand, T.**, Navarro, T., Spiga, A., Forget, F., Millour, E., Madeleine, J. B., and Pottier, A. What are the Origins of Observed Detached Layers of Dust on Mars? Investigating with Global Climate Model. **8th International Conference on Mars**, 2014, Pasadena (Poster).
25. **Bertrand, T.**, Spiga, A., Rafkin, S., Colaitis, A., Forget, F., and Millour, E. LMD-SWRI Martian Mesoscale and Microscale Models Intercomparison for Exomars Landing Characterization. **Mars Atmosphere: Modelling and Observation, 5th International Workshop**, 2014, Granada (Oral).
26. **Bertrand, T.**, Spiga, A., Rafkin, S., Colaitis, A., Forget, F., and Millour, E. LMD - SwRI Martian Mesoscale Models Intercomparison for ExoMars Landing Site Characterization. **EPSC** 2013, London (Poster).

Invited Seminars

1. "Volatile transport modeling on Triton and comparisons to Pluto", online Neptune seminar series, 2022.
2. "Exploring Pluto's climate, atmosphere dynamics and surface-atmosphere interactions", Institut de Recherche

en Astrophysique et Planétologie, Toulouse, 2021

3. “Pluto’s Atmosphere Dynamics”, Laboratoire de Planétologie de Nantes, Nantes, 2020.
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