

**IPaDEGAN Publications (as of January 2020)**

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| Bertola, M. Rebelo, J. Grava, T | *Painlevé IV Critical Asymptotics for Orthogonal Polynomials in the Complex Plane* | **SIGMA 2018**  <https://doi.org/10.3842/SIGMA.2018.091>  <http://hdl.handle.net/20.500.11767/86061> |
| * Cafasso, M. * De la Iglesia, M.D. | *The Toda and Painlevé Systems Associated with Semiclassical Matrix- Valued Orthogonal Polynomials of Laguerre Type* | * **SIGMA 2018**   <https://doi.org/10.3842/SIGMA.2018.076> |
| * Klein, C. * Stoilov, N. | *Numerical Approach to Painlevé Transcendents on Unbounded Domains* | * **SIGMA, 2018**   [**https://doi.org/10.3842/SIGMA.2018.068**](https://doi.org/10.3842/SIGMA.2018.068) |
| * Cafasso, M. * Du Crest de Villeneuve, A. * Yang, D. | *Drinfeld–Sokolov Hierarchies, Tau Functions, and Generalized Schur Polynomials* | **SIGMA , 2018**  <https://doi.org/10.3842/SIGMA.2018.104> |
| Bertola, M. Cafasso, M. Rubtsov, V. | *Noncommutative Painlevé Equations and Systems of Calogero Type* | **Commun. Math. Phys. (2018), 363; pp. 503-530**  <https://doi.org/10.1007/s00220-018-3210-0>  [**https://arxiv.org/abs/1710.00736**](https://arxiv.org/abs/1710.00736) |
| Camassa, R. Falqui, G.  Ortenzi, G. Pedroni, M. Thomson, C. | *Hydrodynamic Models and Confinement Effects by Horizontal Boundaries* | **Journal of Nonlinear Science (2019) 29,**  **pp. 1445-1498**  <https://doi.org/10.1007/s00332-018-9522-6>  <http://arxiv.org/abs/1812.02963>  <https://boa.unimib.it/handle/10281/223376> |
| Cafasso, M.  Claeys, T.  Girotti, M. | *Fredholm determinant solutions of the Painlevé II hierarchy and gap probabilities of determinantal point processes* | **International Mathematical Research Notices**  <https://doi.org/10.1093/imrn/rnz168>  <https://arxiv.org/abs/1902.05595> |
| Basor, E.  Bleher, P. Buckingham,R.  Grava, T.  Its, A.  Its, E.  Keating, J.P. | *A representation of joint moments of CUE characteristic polynomials in terms of Painleve functions* | **Nonlinearity (2019), 32, pp. 4033–4078**  <https://doi.org/10.1088/1361-6544/ab28c7>  <https://arxiv.org/abs/1811.00064> |
| * Crespo, S. * Fasondini, M. * Klein, C. * Stoilov, N. * Vallée, C. | *Multidomain spectral method for the Gauss hypergeometric function* | **Numerical Algorithms 2019**  <https://doi.org/10.1007/s11075-019-00741-7>  <https://arxiv.org/abs/1809.10422> |
| * Camassa, R. * Falqui, G. * Ortenzi, G. * Pedroni, M. Pitton, G. | *Singularity formation as a wetting mechanism in a dispersionless water wave model* | * **Nonlinearity (2019) 32, pp. 4079–4116** * <https://doi.org/10.1088/1361-6544/ab2a1a> |
| Rossi, P.  Du Crest de Villeneuve, A. | *Quantum D*4 *Drinfeld–Sokolov hierarchy and quantum singularity theory* | **Journal of Geometry and Physics (2019) 141, pp. 29-44**  <https://doi.org/10.1016/j.geomphys.2019.02.011>  <https://arxiv.org/abs/1812.05858> |
| Klein, C.  McLaughlin, K.  Stoilov, N. | *Spectral approach to the scattering map for the semi-classical defocusing Davey-Stewartson II equation* | **Physica D: Nonlinear Phenomena (2019) 400, 132126.**  <https://doi.org/10.1016/j.physd.2019.05.006>  <https://arxiv.org/abs/1809.08282> |
| * Camassa, R. * Falqui, G. * Ortenzi, G. * Pedroni, M. | *On the geometry of extended self-similar solutions of the Airy Shallow Water Equations* | * **SIGMA 15 (2019)**   <https://doi.org/10.3842/SIGMA.2019.087> |
| Bertola, M.  Ruzza, G. | *Brezin-Gross-Witten tau function and isomonodromic deformations* | Communications in Number Theory and Physics (2019), 13, pp.827-833. <https://dx.doi.org/10.4310/CNTP.2019.v13.n4.a4> |
| * Desiraju, H. | *The τ-function of the Ablowitz-Segur family of solutions to Painlev ́e II as a Widom constant* | **Journal of Mathematical Physics (2019), 60, 113505**  <https://doi.org/10.1063/1.5120357>  <https://arxiv.org/abs/1812.02116> |
| Klein C.  Stoilov N. | *Numerical scattering for the defocusing Davey-Stewartson II equation for initial data with compact support* | Nonlinearity (2019) 32, pp. 4258-4280<https://doi.org/10.1088/1361-6544/ab28c6><https://arxiv.org/abs/1809.08294> |
| Arbunich J.  Klein C.  Sparber C. | *On a class of derivative Nonlinear schrodinger -type equations in two spatial dimensions* | ESAIM: M2AN (2019) 53, pp. 1477-1505<https://doi.org/10.1051/m2an/2019018> <https://arxiv.org/abs/1805.12351> |
| Assainova O.  Klein C.  McLaughlin K.  Miller P. | *A Study of the Direct Spectral Transform for the Defocusing DaveyStewartson II Equation in the Semiclassical Limit* | Comm. Pure Appl. Math.<https://doi.org/10.1002/cpa.21822> <https://arxiv.org/abs/1710.03429> |
| Cafasso, M.  Wu, CZ. | *Borodin–Okounkov formula, string equation and topological solutions of Drinfeld–Sokolov hierarchies* | **Lett Math Phys (2019) 109, pp 2681-2722**  <https://doi.org/10.1007/s11005-019-01205-8> |
| * Camassa, R. * Falqui, G. * Ortenzi, G.   Pedroni, M. Pitton, G. | *On the “vacuum” Dam-Break Problem: Exact Solutions and Their Long Time Asymptotics* | SIAM Journal on Applied Mathematics <https://doi.org/10.1137/19M1266836> |