

**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>
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| 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> |