

# Non-commutative nodal curves and derived tame algebras

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Nodal orders were introduced by Yu. Drozd as appropriate non-commutative generalizations of the ring  $\mathbb{k}\langle\langle x, y \rangle\rangle/(xy)$ . They are the only orders which are representation tame [4]. Later Drozd and myself have proven that nodal orders are even derived tame [3]. In my talk, I am going to introduce a class of derived tame finite dimensional algebras (which include certain gentle, skew-gentle and degenerate tubular algebras), which are derived equivalent to an appropriate non-commutative projective nodal curve, i.e. a ringed space  $\mathbb{X} = (X, \mathcal{A})$ , where  $X$  is a conventional projective curve and  $\mathcal{A}$  is a sheaf of nodal orders on  $X$ . As an application of the developed technique, I shall show that the Rouquier dimension of any gentle/skew-gentle algebra or of a cycle of projective lines, is equal to one. My talk is based on joint works with Yu. Drozd [1, 2].

## References

- [1] I. Burban, Yu. Drozd, *Non-commutative nodal curves and derived tame algebras*, [arXiv:1805.05174](#).
- [2] I. Burban, Yu. Drozd, *On the derived categories of gentle and skew-gentle algebras: homological algebra and matrix problems*, [arXiv:1706.08358](#).
- [3] I. Burban, Yu. Drozd, *Derived categories of nodal algebras*, *J. Algebra* **272** (2004), no. 1, 46–94.
- [4] Yu. Drozd, *Finite modules over purely Noetherian algebras*, *Proc. Steklov Inst. Math.* (1991) no. 4, 97–108.