## Some new results on Wilf's conjecture

Shalom Eliahou

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$g \backslash q$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
21	1	17710	34069	7943	1750	453	172	46	19	15	9	2	2	2	0
22	1	28656	57566	13108	2806	707	249	81	32	16	16	2	2	2	1
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#### Numerical illustration of Zhai's result

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 $R = K[t^{a_1}u, \ldots, t^{a_n}u]$ 

where deg(*t*) = 0, deg(*u*) = 1. Then dim  $R_i = |iA|$  for all *i*. Let  $J \subseteq R$  be the ideal spanned by all monomials of the form  $t^b u^2, t^c u^3$ , where *b*, *c* either are not Apéry elements or are too large in some specific sense. Let R' = R/J. Applying condensed Macaulay to R' yields Wilf's conjecture for  $q \leq 3$  after some calculations.

Shalom Eliahou (ULCO)

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### A graph-theoretic approach

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### Grazie mille per la sua attenzione :-)

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