Two appendices

In these two appendices we will use the notation, formula numbers, and the reference [Pi] from the main body of the paper. The first appendix is an important part of the paper; it provides examples of non-affine Piontkowski cells, i.e. those non-isomorphic to affine spaces $\mathbb{A}^N$. Such cells influence the geometric superpolynomial in quite a non-trivial way. They are differences of some affine cells, so their corresponding contributions contain the a, q, t–monomials with negative coefficients. When $t = 1$, some such cells contribute 0, i.e. behave as non-admissible ones. In all considered examples, we calculated the geometric superpolynomials for $t = 1$ for all m.

The second appendix is a complete list of all dimensions in the case of $\mathcal{R} = \mathbb{C}[[z^6, z^9 + z^{13}]]$ corresponding to $\Gamma = \langle 6, 9, 22\rangle$. It is supposed to be used together with the table of non-affine cells in this case, which we provide. There are many interesting properties and symmetries of these dimensions, which we do not systematically discuss or do not touch at all. We think that this table somewhat compensates this.

Appendix A. Non-affine cells

A.1. **Puiseux exponents (6,9,13).** Let us discuss the case of $\mathcal{R} = \mathbb{C}[[z^6, z^9 + z^{13}]]$, the third in the table after Theorem 13 in [Pi] of the cases beyond the technique of this paper (including counting the Euler numbers). Here $\Gamma = \langle 6, 9, 22\rangle, \delta = 24$, the link is $Cab(22, 3)T(3, 2)$.

Let $D^\dagger$ be the set of entries in a D–set, which are *primitive*, i.e. the minimal set of generators of the module Δ over Γ; we omit 0. This is obviously sufficient to recover D. We confirm the claim from [Pi] that $J_{\mathcal{R}}[D]$ is non-affine for $D^\dagger = \{3, 7, 10, 17, 20\}$, i.e. for

$$D = [3, 7, 10, 13, 16, 17, 19, 20, 23, 25, 26, 29, 32, 35, 38, 41, 47].$$

Table 8 gives *all* non-affine cells; we provide the corresponding $D^\dagger$, $d = |D|$, the (biregular) type of $J_{\mathcal{R}}[D]$, and the corresponding contribution to the (geometric) superpolynomials. We put $\mathbb{A}^N \vee \mathbb{A}^N$ for the amalgam (union) of two $\mathbb{A}^N$ with the intersection $\mathbb{A}^{N-1}$.

The total number of modules Δ is 605, $e(J_{\mathcal{R}}) = 523$ and the total number of non-admissible modules is 79. The latter is *not* now $605 - 523 = 82$, since 3 modules from Table 8 of type $(\mathbb{A}^N \setminus \mathbb{A}^{N-1})$ do not contribute to the Euler number. The other 3 contribute $2 - 1 = 1$, as

$D^\dagger$-sets	$\lvert D\rvert$	types	q,t-terms
{3, 11, 14}	14	$\mathbb{A}^{17}\setminus\mathbb{A}^{16}$	$q^{14}(t^7-t^8)$
{3, 10, 13, 20, 23}	15	$\mathbb{A}^{16}\vee\mathbb{A}^{16}$	$q^{15}(2t^8-t^9)$
{3, 11, 14, 19}	15	$\mathbb{A}^{15}\setminus\mathbb{A}^{14}$	$q^{15}(t^9-t^{10})$
{3, 8, 11, 19}	16	$\mathbb{A}^{15}\setminus\mathbb{A}^{14}$	$q^{16}(t^9-t^{10})$
{3, 10, 13, 17, 20}	16	$\mathbb{A}^{14}\vee\mathbb{A}^{14}$	$q^{16}(2t^{10}-t^{11})$
{3, 7, 10, 17, 20}	17	$\mathbb{A}^{14}\vee\mathbb{A}^{14}$	$q^{17}(2t^{10}-t^{11})$

TABLE 8. Non-affine $J_{\mathcal{R}}[D]$ for $\Gamma=\langle 6,9,22\rangle$

with ordinary affine cells. Actually, this is not the simplest example; $\mathcal{R}=\mathbb{C}[[z^6,z^9+z^{11}]]$ has 3 D and 10 $\mathcal{D}=[D_0,D_1]$ of type $(\mathbb{A}^N\setminus\mathbb{A}^{N-1})$.

We have a sketch of the justification that $J_{\mathcal{R}}[d]$ for d from the table are still paved by affine spaces due to the "redistribution" of cells. Namely, each subtracted $\mathbb{A}^N$ can be compensated by adding an affine cell $J_{\mathcal{R}}[D']$ to $J_{\mathcal{R}}[D]$ from the table, where $|D'|=|D|$ and $J_{\mathcal{R}}[D']$ is *from the boundary* of $J_{\mathcal{R}}[D]$. For instance, $(\mathbb{A}^N\vee\mathbb{A}^N)\cup\mathbb{A}^{N-1} = \mathbb{A}^N\cup\mathbb{A}^N$, where the cell $\mathbb{A}^{N-1}$ (of the same d) is taken from the boundary of the cell $(\mathbb{A}^N\vee\mathbb{A}^N)$. Proposition 2.1 is used here. For instance, our analysis gives that 2 cells with $D_1^\dagger=\{4,7,10,14,20\}$, $D_2^\dagger=\{4,7,10,17,20\}$ belong to the boundary of that for the last entry $\{3,7,10,17,20\}$ of the table; they are with (the same!) $d=|D_{1,2}|=17$ and biregular to $\mathbb{A}^{13}$.

A.2. **Two-flag cells.** The following is the list of all non-affine cells for $m=1$, i.e. for D–flags $[D_0,D_1]$. We will show the $D^\dagger$ from Table 8 by omitting the second entry. They are of importance since either D_0 or D_1 are with non-affine cells if the flag $[D_0,D_1]$ corresponds to a non-affine one. This matches Proposition 2.3. However, there is plenty of *affine* two-flag cells when one of the ends is non-affine. Similar to Table 8, the type is that for $N=dim$ and we provide the contributions to the corresponding *geometric* superpolynomial.

Since there are non-affine Piontkowski cells, (2.6) is not applicable. We checked (2.7) and the coincidence from (2.5) for the coefficients of $a^{0,1}$ and any q,t and also under $t=1$ for any powers of a and any q, understanding the admissibility of $\mathcal{D}$ as that of all D_i, which is potentially weaker than the actual admissibility of $\mathcal{D}$ but sufficient for the match with the DAHA superpolynomial. I.e. the geometric

$D_0^\dagger$-sets	$D_1^\dagger$-sets	dim	types	q,t,a-terms
{11,14,25}	{3,11,14,25}	18	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{14}(t^6-t^7)$
{3,11,14}	———	17	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$q^{14}(t^7-t^8)$
{3,11,14}	{3,11,14,16}	18	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{15}(t^6-t^7)$
{3,11,14}	{3,11,14,19}	17	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{15}(t^7-t^8)$
{10,13,20,23}	{3,10,13,20,23}	17	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{15}(2t^7-t^8)$
{11,14,19}	{3,11,14,19}	16	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{15}(t^8-t^9)$
{3,10,13,20,23}	———	16	$\mathbb{A}^N\vee\mathbb{A}^N$	$q^{15}(2t^8-t^9)$
{3,10,13,20,23}	{3,10,13,14}	17	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{16}(2t^7-t^8)$
{3,10,13,20,23}	{3,10,13,17,20}	16	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{16}(2t^8-t^9)$
{3,11,14,19}	———	15	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$q^{15}(t^9-t^{10})$
{3,11,14,19}	{3,8,11,19}	17	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{16}(t^7-t^8)$
{3,11,14,19}	{3,11,13,14}	16	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{16}(t^8-t^9)$
{3,11,14,19}	{3,11,14,16,19}	15	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{16}(t^9-t^{10})$
{8,11,19}	{3,8,11,19}	16	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{16}(t^8-t^9)$
{10,13,17,20}	{3,10,13,17,20}	15	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{16}(2t^9-t^{10})$
{3,8,11,19}	———	15	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$q^{16}(t^9-t^{10})$
{3,8,11,19}	{3,8,11,13}	16	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{17}(t^8-t^9)$
{3,8,11,19}	{3,8,11,16,19}	15	$\mathbb{A}^N\setminus\mathbb{A}^{N-1}$	$aq^{17}(t^9-t^{10})$
{3,10,13,17,20}	———	14	$\mathbb{A}^N\vee\mathbb{A}^N$	$q^{16}(2t^{10}-t^{11})$
{3,10,13,17,20}	{3,7,10,17,20}	16	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{17}(2t^8-t^9)$
{3,10,13,17,20}	{3,10,11,13}	15	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{17}(2t^9-t^{10})$
{3,10,13,17,20}	{3,10,13,14,17}	14	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{17}(2t^{10}-t^{11})$
{7,10,17,20}	{3,7,10,17,20}	15	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{17}(2t^9-t^{10})$
{3,7,10,17,20}	———	14	$\mathbb{A}^N\vee\mathbb{A}^N$	$2q^{17}(t^{10}-t^{11})$
{3,7,10,17,20}	{3,7,10,11}	15	$\mathbb{A}^N\vee\mathbb{A}^N$	$aq^{18}(2t^9-t^{10})$
{3,7,10,17,20}	{3,7,10,14,17}	14	$\mathbb{A}^N\vee\mathbb{A}^N$	$2aq^{18}(t^{10}-t^{11})$

TABLE 9. Non-affine $J^{m=1}_{\mathcal{R}}[D_0,D_1]$ for $\Gamma=\langle 6,9,22\rangle$

superpolynomials $\mathcal{H}^{hom}$ and $\mathcal{H}^{mod}$ coincide with $\mathcal{H}_{\vec{r},\vec{s}}(\Box;q,t,a)$ for such q,t,a, quite a confirmation of Conjecture 2.5.

Recall that (2.7) is equivalent to (5.2) for $\mathcal{H}^{wt}(q,t,a)$ in terms of the weight filtration. An obvious advantage of modular (2.7) vs. (2.5) is that we do not need to understand the geometry of $J_{\mathcal{R}}[d]$. A possible passage to obtaining (2.5) is as follows. One can try to "recombine" the Piontkowski cells of $J_{\mathcal{R}}[d]$ (within a fixed d) to obtain *affine* cells; the boundaries of $J_{\mathcal{R}}[D]$ must be known for this. We have a sketch of the corresponding theory, but it is not finished. In the considered case, this is doable and the resulting complex provides (2.5).

The modular approach requires only counting points of $J_{\mathcal{R}}[\mathcal{D}]$ over $\mathbb{F}_{1/t}$; the types from Table 8 are sufficient for this (knowing the boundaries is unnecessary). Our programs determine such types automatically (algebraically) for "almost" all cells. We always combine this with counting $\mathbb{F}_{1/t}$–points (for all cells). Note that $p=2$ is the only place of *bad reduction* here due to $\nu((z^9+z^{13})^2-(z^6)^3)=22$.

A straightforward elimination of the standard λ–parameters of our modules M (see [Pi] and above) gives that only 9 D–cells can be potentially non-affine; 6 of them from Table 8 are non-affine indeed.

A.3. **Superpolynomial.** Let us provide the corresponding DAHA superpolynomial, which is for $\vec{\mathsf{r}}=\{3,3\}$, $\vec{\mathsf{s}}=\{2,4\}$. Recall that the DAHA construction requires the matrices from $PSL_2(\mathbb{Z})$ with the first columns $(\mathsf{r}_i,\mathsf{s}_i)^{tr}$, namely: $\begin{pmatrix}3,*\\2,*\end{pmatrix}=\tau_+\tau_-^2\,,\ \begin{pmatrix}3,*\\4,*\end{pmatrix}=\tau_-\tau_+^2\tau_-\,.$ Then:

$$\vec{\mathsf{r}}=\{3,3\},\,\vec{\mathsf{s}}=\{2,4\},\,\mathcal{T}=Cab(22,3)T(3,2);\ \mathcal{H}_{\vec{\mathsf{r}},\vec{\mathsf{s}}}(\square\,;\ q,t,a)=$$

$$\begin{aligned}
&1+qt+q^2t+q^3t+q^4t+q^5t+q^2t^2+q^3t^2+2q^4t^2+2q^5t^2+3q^6t^2+2q^7t^2+q^8t^2+\\
&q^3t^3+q^4t^3+2q^5t^3+3q^6t^3+4q^7t^3+4q^8t^3+4q^9t^3+q^{10}t^3+q^4t^4+q^5t^4+2q^6t^4+\\
&3q^7t^4+5q^8t^4+5q^9t^4+6q^{10}t^4+4q^{11}t^4+q^{12}t^4+q^5t^5+q^6t^5+2q^7t^5+3q^8t^5+\\
&5q^9t^5+6q^{10}t^5+7q^{11}t^5+6q^{12}t^5+4q^{13}t^5+q^{14}t^5+q^6t^6+q^7t^6+2q^8t^6+3q^9t^6+\\
&5q^{10}t^6+6q^{11}t^6+8q^{12}t^6+7q^{13}t^6+6q^{14}t^6+3q^{15}t^6+q^7t^7+q^8t^7+2q^9t^7+3q^{10}t^7+\\
&5q^{11}t^7+6q^{12}t^7+8q^{13}t^7+8q^{14}t^7+7q^{15}t^7+3q^{16}t^7+q^{17}t^7+q^8t^8+q^9t^8+2q^{10}t^8+\\
&3q^{11}t^8+5q^{12}t^8+6q^{13}t^8+8q^{14}t^8+8q^{15}t^8+8q^{16}t^8+3q^{17}t^8+q^9t^9+q^{10}t^9+\\
&2q^{11}t^9+3q^{12}t^9+5q^{13}t^9+6q^{14}t^9+8q^{15}t^9+8q^{16}t^9+7q^{17}t^9+3q^{18}t^9+q^{10}t^{10}+\\
&q^{11}t^{10}+2q^{12}t^{10}+3q^{13}t^{10}+5q^{14}t^{10}+6q^{15}t^{10}+8q^{16}t^{10}+8q^{17}t^{10}+6q^{18}t^{10}+\\
&q^{19}t^{10}+q^{11}t^{11}+q^{12}t^{11}+2q^{13}t^{11}+3q^{14}t^{11}+5q^{15}t^{11}+6q^{16}t^{11}+8q^{17}t^{11}+\\
&7q^{18}t^{11}+4q^{19}t^{11}+q^{12}t^{12}+q^{13}t^{12}+2q^{14}t^{12}+3q^{15}t^{12}+5q^{16}t^{12}+6q^{17}t^{12}+\\
&8q^{18}t^{12}+6q^{19}t^{12}+q^{20}t^{12}+q^{13}t^{13}+q^{14}t^{13}+2q^{15}t^{13}+3q^{16}t^{13}+5q^{17}t^{13}+\\
&6q^{18}t^{13}+7q^{19}t^{13}+4q^{20}t^{13}+q^{14}t^{14}+q^{15}t^{14}+2q^{16}t^{14}+3q^{17}t^{14}+5q^{18}t^{14}+\\
&6q^{19}t^{14}+6q^{20}t^{14}+q^{21}t^{14}+q^{15}t^{15}+q^{16}t^{15}+2q^{17}t^{15}+3q^{18}t^{15}+5q^{19}t^{15}+\\
&5q^{20}t^{15}+4q^{21}t^{15}+q^{16}t^{16}+q^{17}t^{16}+2q^{18}t^{16}+3q^{19}t^{16}+5q^{20}t^{16}+4q^{21}t^{16}+\\
&q^{22}t^{16}+q^{17}t^{17}+q^{18}t^{17}+2q^{19}t^{17}+3q^{20}t^{17}+4q^{21}t^{17}+2q^{22}t^{17}+q^{18}t^{18}+q^{19}t^{18}+\\
&2q^{20}t^{18}+3q^{21}t^{18}+3q^{22}t^{18}+q^{19}t^{19}+q^{20}t^{19}+2q^{21}t^{19}+2q^{22}t^{19}+q^{23}t^{19}+q^{20}t^{20}+\\
&q^{21}t^{20}+2q^{22}t^{20}+q^{23}t^{20}+q^{21}t^{21}+q^{22}t^{21}+q^{23}t^{21}+q^{22}t^{22}+q^{23}t^{22}+q^{23}t^{23}+q^{24}t^{24}
\end{aligned}$$

$$+a^5\big(q^{15}+q^{16}t+q^{17}t+q^{17}t^2+q^{18}t^2+q^{19}t^2+q^{18}t^3+q^{19}t^3+q^{20}t^3+q^{21}t^3+q^{19}t^4+$$
$$q^{20}t^4+q^{21}t^4+q^{20}t^5+q^{21}t^5+q^{22}t^5+q^{21}t^6+q^{22}t^6+q^{22}t^7+q^{23}t^7+q^{23}t^8+q^{24}t^9\big)$$
$$+a^4\big(q^{10}+q^{11}+q^{12}+q^{13}+q^{14}+q^{11}t+2q^{12}t+3q^{13}t+3q^{14}t+3q^{15}t+q^{16}t+q^{12}t^2+$$
$$2q^{13}t^2+4q^{14}t^2+5q^{15}t^2+5q^{16}t^2+3q^{17}t^2+q^{18}t^2+q^{13}t^3+2q^{14}t^3+4q^{15}t^3+6q^{16}t^3+$$
$$7q^{17}t^3+5q^{18}t^3+3q^{19}t^3+q^{20}t^3+q^{14}t^4+2q^{15}t^4+4q^{16}t^4+6q^{17}t^4+8q^{18}t^4+6q^{19}t^4+$$
$$3q^{20}t^4+q^{21}t^4+q^{15}t^5+2q^{16}t^5+4q^{17}t^5+6q^{18}t^5+8q^{19}t^5+6q^{20}t^5+3q^{21}t^5+q^{16}t^6+$$
$$2q^{17}t^6+4q^{18}t^6+6q^{19}t^6+8q^{20}t^6+5q^{21}t^6+q^{22}t^6+q^{17}t^7+2q^{18}t^7+4q^{19}t^7+6q^{20}t^7+$$
$$7q^{21}t^7+3q^{22}t^7+q^{18}t^8+2q^{19}t^8+4q^{20}t^8+6q^{21}t^8+5q^{22}t^8+q^{23}t^8+q^{19}t^9+2q^{20}t^9+$$
$$4q^{21}t^9+5q^{22}t^9+3q^{23}t^9+q^{20}t^{10}+2q^{21}t^{10}+4q^{22}t^{10}+3q^{23}t^{10}+q^{24}t^{10}+q^{21}t^{11}+$$
$$2q^{22}t^{11}+3q^{23}t^{11}+q^{24}t^{11}+q^{22}t^{12}+2q^{23}t^{12}+q^{24}t^{12}+q^{23}t^{13}+q^{24}t^{13}+q^{24}t^{14}\big)$$
$$+a^3\big(q^6+q^7+2q^8+2q^9+2q^{10}+q^{11}+q^{12}+q^7t+2q^8t+4q^9t+6q^{10}t+7q^{11}t+$$
$$6q^{12}t+4q^{13}t+2q^{14}t+q^8t^2+2q^9t^2+5q^{10}t^2+8q^{11}t^2+12q^{12}t^2+12q^{13}t^2+$$
$$10q^{14}t^2+5q^{15}t^2+2q^{16}t^2+q^9t^3+2q^{10}t^3+5q^{11}t^3+9q^{12}t^3+14q^{13}t^3+17q^{14}t^3+$$
$$16q^{15}t^3+11q^{16}t^3+5q^{17}t^3+2q^{18}t^3+q^{10}t^4+2q^{11}t^4+5q^{12}t^4+9q^{13}t^4+15q^{14}t^4+$$
$$19q^{15}t^4+21q^{16}t^4+16q^{17}t^4+9q^{18}t^4+3q^{19}t^4+q^{20}t^4+q^{11}t^5+2q^{12}t^5+5q^{13}t^5+$$
$$9q^{14}t^5+15q^{15}t^5+20q^{16}t^5+23q^{17}t^5+19q^{18}t^5+10q^{19}t^5+3q^{20}t^5+q^{12}t^6+$$
$$2q^{13}t^6+5q^{14}t^6+9q^{15}t^6+15q^{16}t^6+20q^{17}t^6+24q^{18}t^6+19q^{19}t^6+9q^{20}t^6+2q^{21}t^6+$$
$$q^{13}t^7+2q^{14}t^7+5q^{15}t^7+9q^{16}t^7+15q^{17}t^7+20q^{18}t^7+23q^{19}t^7+16q^{20}t^7+5q^{21}t^7+$$
$$q^{14}t^8+2q^{15}t^8+5q^{16}t^8+9q^{17}t^8+15q^{18}t^8+20q^{19}t^8+21q^{20}t^8+11q^{21}t^8+2q^{22}t^8+$$
$$q^{15}t^9+2q^{16}t^9+5q^{17}t^9+9q^{18}t^9+15q^{19}t^9+19q^{20}t^9+16q^{21}t^9+5q^{22}t^9+q^{16}t^{10}+$$
$$2q^{17}t^{10}+5q^{18}t^{10}+9q^{19}t^{10}+15q^{20}t^{10}+17q^{21}t^{10}+10q^{22}t^{10}+2q^{23}t^{10}+q^{17}t^{11}+$$
$$2q^{18}t^{11}+5q^{19}t^{11}+9q^{20}t^{11}+14q^{21}t^{11}+12q^{22}t^{11}+4q^{23}t^{11}+q^{18}t^{12}+2q^{19}t^{12}+$$
$$5q^{20}t^{12}+9q^{21}t^{12}+12q^{22}t^{12}+6q^{23}t^{12}+q^{24}t^{12}+q^{19}t^{13}+2q^{20}t^{13}+5q^{21}t^{13}+$$
$$8q^{22}t^{13}+7q^{23}t^{13}+q^{24}t^{13}+q^{20}t^{14}+2q^{21}t^{14}+5q^{22}t^{14}+6q^{23}t^{14}+2q^{24}t^{14}+q^{21}t^{15}+$$
$$2q^{22}t^{15}+4q^{23}t^{15}+2q^{24}t^{15}+q^{22}t^{16}+2q^{23}t^{16}+2q^{24}t^{16}+q^{23}t^{17}+q^{24}t^{17}+q^{24}t^{18}\big)$$
$$+a^2\big(q^3+q^4+2q^5+2q^6+2q^7+q^8+q^9+q^4t+2q^5t+4q^6t+6q^7t+8q^8t+7q^9t+$$
$$6q^{10}t+3q^{11}t+q^{12}t+q^5t^2+2q^6t^2+5q^7t^2+8q^8t^2+13q^9t^2+15q^{10}t^2+15q^{11}t^2+$$
$$10q^{12}t^2+5q^{13}t^2+q^{14}t^2+q^6t^3+2q^7t^3+5q^8t^3+9q^9t^3+15q^{10}t^3+20q^{11}t^3+$$
$$24q^{12}t^3+19q^{13}t^3+12q^{14}t^3+5q^{15}t^3+q^{16}t^3+q^7t^4+2q^8t^4+5q^9t^4+9q^{10}t^4+$$
$$16q^{11}t^4+22q^{12}t^4+29q^{13}t^4+28q^{14}t^4+21q^{15}t^4+11q^{16}t^4+4q^{17}t^4+q^{18}t^4+$$
$$q^8t^5+2q^9t^5+5q^{10}t^5+9q^{11}t^5+16q^{12}t^5+23q^{13}t^5+31q^{14}t^5+33q^{15}t^5+29q^{16}t^5+$$
$$16q^{17}t^5+6q^{18}t^5+q^{19}t^5+q^9t^6+2q^{10}t^6+5q^{11}t^6+9q^{12}t^6+16q^{13}t^6+23q^{14}t^6+$$
$$32q^{15}t^6+35q^{16}t^6+32q^{17}t^6+19q^{18}t^6+6q^{19}t^6+q^{20}t^6+q^{10}t^7+2q^{11}t^7+5q^{12}t^7+$$
$$9q^{13}t^7+16q^{14}t^7+23q^{15}t^7+32q^{16}t^7+36q^{17}t^7+32q^{18}t^7+16q^{19}t^7+4q^{20}t^7+$$
$$q^{11}t^8+2q^{12}t^8+5q^{13}t^8+9q^{14}t^8+16q^{15}t^8+23q^{16}t^8+32q^{17}t^8+35q^{18}t^8+29q^{19}t^8+$$
$$11q^{20}t^8+q^{21}t^8+q^{12}t^9+2q^{13}t^9+5q^{14}t^9+9q^{15}t^9+16q^{16}t^9+23q^{17}t^9+32q^{18}t^9+$$
$$33q^{19}t^9+21q^{20}t^9+5q^{21}t^9+q^{13}t^{10}+2q^{14}t^{10}+5q^{15}t^{10}+9q^{16}t^{10}+16q^{17}t^{10}+$$
$$23q^{18}t^{10}+31q^{19}t^{10}+28q^{20}t^{10}+12q^{21}t^{10}+q^{22}t^{10}+q^{14}t^{11}+2q^{15}t^{11}+5q^{16}t^{11}+$$
$$9q^{17}t^{11}+16q^{18}t^{11}+23q^{19}t^{11}+29q^{20}t^{11}+19q^{21}t^{11}+5q^{22}t^{11}+q^{15}t^{12}+2q^{16}t^{12}+$$
$$5q^{17}t^{12}+9q^{18}t^{12}+16q^{19}t^{12}+22q^{20}t^{12}+24q^{21}t^{12}+10q^{22}t^{12}+q^{23}t^{12}+q^{16}t^{13}+$$
$$2q^{17}t^{13}+5q^{18}t^{13}+9q^{19}t^{13}+16q^{20}t^{13}+20q^{21}t^{13}+15q^{22}t^{13}+3q^{23}t^{13}+q^{17}t^{14}+$$
$$2q^{18}t^{14}+5q^{19}t^{14}+9q^{20}t^{14}+15q^{21}t^{14}+15q^{22}t^{14}+6q^{23}t^{14}+q^{18}t^{15}+2q^{19}t^{15}+$$
$$5q^{20}t^{15}+9q^{21}t^{15}+13q^{22}t^{15}+7q^{23}t^{15}+q^{24}t^{15}+q^{19}t^{16}+2q^{20}t^{16}+5q^{21}t^{16}+$$

$8q^{22}t^{16}+8q^{23}t^{16}+q^{24}t^{16}+q^{20}t^{17}+2q^{21}t^{17}+5q^{22}t^{17}+6q^{23}t^{17}+2q^{24}t^{17}+q^{21}t^{18}+2q^{22}t^{18}+4q^{23}t^{18}+2q^{24}t^{18}+q^{22}t^{19}+2q^{23}t^{19}+2q^{24}t^{19}+q^{23}t^{20}+q^{24}t^{20}+q^{24}t^{21}\big)$
$+a\big(q+q^2+q^3+q^4+q^5+q^2t+2q^3t+3q^4t+4q^5t+5q^6t+4q^7t+2q^8t+q^9t+q^3t^2+2q^4t^2+4q^5t^2+6q^6t^2+9q^7t^2+10q^8t^2+9q^9t^2+5q^{10}t^2+2q^{11}t^2+q^4t^3+2q^5t^3+4q^6t^3+7q^7t^3+11q^8t^3+14q^9t^3+16q^{10}t^3+13q^{11}t^3+6q^{12}t^3+2q^{13}t^3+q^5t^4+2q^6t^4+4q^7t^4+7q^8t^4+12q^9t^4+16q^{10}t^4+20q^{11}t^4+20q^{12}t^4+14q^{13}t^4+6q^{14}t^4+2q^{15}t^4+q^6t^5+2q^7t^5+4q^8t^5+7q^9t^5+12q^{10}t^5+17q^{11}t^5+22q^{12}t^5+24q^{13}t^5+21q^{14}t^5+13q^{15}t^5+4q^{16}t^5+q^{17}t^5+q^7t^6+2q^8t^6+4q^9t^6+7q^{10}t^6+12q^{11}t^6+17q^{12}t^6+23q^{13}t^6+26q^{14}t^6+25q^{15}t^6+17q^{16}t^6+7q^{17}t^6+q^{18}t^6+q^8t^7+2q^9t^7+4q^{10}t^7+7q^{11}t^7+12q^{12}t^7+17q^{13}t^7+23q^{14}t^7+27q^{15}t^7+27q^{16}t^7+18q^{17}t^7+7q^{18}t^7+q^{19}t^7+q^9t^8+2q^{10}t^8+4q^{11}t^8+7q^{12}t^8+12q^{13}t^8+17q^{14}t^8+23q^{15}t^8+27q^{16}t^8+27q^{17}t^8+17q^{18}t^8+4q^{19}t^8+q^{10}t^9+2q^{11}t^9+4q^{12}t^9+7q^{13}t^9+12q^{14}t^9+17q^{15}t^9+23q^{16}t^9+27q^{17}t^9+25q^{18}t^9+13q^{19}t^9+2q^{20}t^9+q^{11}t^{10}+2q^{12}t^{10}+4q^{13}t^{10}+7q^{14}t^{10}+12q^{15}t^{10}+17q^{16}t^{10}+23q^{17}t^{10}+26q^{18}t^{10}+21q^{19}t^{10}+6q^{20}t^{10}+q^{12}t^{11}+2q^{13}t^{11}+4q^{14}t^{11}+7q^{15}t^{11}+12q^{16}t^{11}+17q^{17}t^{11}+23q^{18}t^{11}+24q^{19}t^{11}+14q^{20}t^{11}+2q^{21}t^{11}+q^{13}t^{12}+2q^{14}t^{12}+4q^{15}t^{12}+7q^{16}t^{12}+12q^{17}t^{12}+17q^{18}t^{12}+22q^{19}t^{12}+20q^{20}t^{12}+6q^{21}t^{12}+q^{14}t^{13}+2q^{15}t^{13}+4q^{16}t^{13}+7q^{17}t^{13}+12q^{18}t^{13}+17q^{19}t^{13}+20q^{20}t^{13}+13q^{21}t^{13}+2q^{22}t^{13}+q^{15}t^{14}+2q^{16}t^{14}+4q^{17}t^{14}+7q^{18}t^{14}+12q^{19}t^{14}+16q^{20}t^{14}+16q^{21}t^{14}+5q^{22}t^{14}+q^{16}t^{15}+2q^{17}t^{15}+4q^{18}t^{15}+7q^{19}t^{15}+12q^{20}t^{15}+14q^{21}t^{15}+9q^{22}t^{15}+q^{23}t^{15}+q^{17}t^{16}+2q^{18}t^{16}+4q^{19}t^{16}+7q^{20}t^{16}+11q^{21}t^{16}+10q^{22}t^{16}+2q^{23}t^{16}+q^{18}t^{17}+2q^{19}t^{17}+4q^{20}t^{17}+7q^{21}t^{17}+9q^{22}t^{17}+4q^{23}t^{17}+q^{19}t^{18}+2q^{20}t^{18}+4q^{21}t^{18}+6q^{22}t^{18}+5q^{23}t^{18}+q^{20}t^{19}+2q^{21}t^{19}+4q^{22}t^{19}+4q^{23}t^{19}+q^{24}t^{19}+q^{21}t^{20}+2q^{22}t^{20}+3q^{23}t^{20}+q^{24}t^{20}+q^{22}t^{21}+2q^{23}t^{21}+q^{24}t^{21}+q^{23}t^{22}+q^{24}t^{22}+q^{24}t^{23}\big).$

Concerning practical aspects, the production of this DAHA superpolynomial requires a couple of minutes. About the same time is needed to calculate all dimensions of $J_{\mathcal{R}}[D]$, including the list of non-admissible modules and potentially non-affine cells. Such a calculation with $J^{m=1}_{\mathcal{R}}[\mathcal{D}]$ takes about 10 minutes.

A.4. **Exponents (6,9,14),(6,9,16).** An example of a cell which type is different from those in Table 8 is for $\mathcal{R}=\mathbb{C}[[z^6,z^9+z^{14}]]$, where $\Gamma=\langle 6,9,23\rangle, \delta=25$ and the corresponding link is $Cab(23,3)T(3,2)$. Namely, there is exactly one cell $J_{\mathcal{R}}[D]$ for $D^{\dagger}=\{3,10,13,20\}$ that is biregular to $(\mathbb{A}^{15}\setminus\mathbb{A}^{14})\cup(\mathbb{A}^{15}\setminus\mathbb{A}^{14})$; here $|D|=16$, the union is disjoint and the contribution to the superpolynomial is $2aq^{16}(t^9-t^{10})$. This is the simplest *disconnected* D-cell we found. For 2-flags, new types of cells are of the same kind $(\mathbb{A}^N\setminus\mathbb{A}^{N-1})\cup(\mathbb{A}^N\setminus\mathbb{A}^{N-1})$; they are:

$$D_0^\dagger=\{10,13,20\},\qquad D_1^\dagger=\{3,10,13,20\},\ dim=17,\quad 2aq^{16}(t^8-t^9),$$
$$D_0^\dagger=\{3,10,13,20\},\qquad D_1^\dagger=\{3,10,13,14\},\ dim=17,\quad 2aq^{17}(t^8-t^9),$$
$$D_0^\dagger=\{3,10,13,20\},\quad D_1^\dagger=\{3,10,13,17,20\},\ dim=16,\quad 2aq^{17}(t^9-t^{10}).$$

Also, there are $4+5$ non-affine "old" D–cells of types $\mathbb{A}^N\setminus\mathbb{A}^{N-1}$ and $\mathbb{A}^N\vee\mathbb{A}^N$. The total number of non-affine cells for $m=0,1$ (contributing to $a^{0,1}$) is 44. It takes about 5 min to calculate all $\dim J_{\mathcal{R}}[D]$ and about 30 min for obtaining all $\dim J_{\mathcal{R}}^{m=1}[D_0,D_1]$. The computer program almost always finds the types of non-affine cells (reporting questionable cases). The match with the DAHA-superpolynomial for the coefficients of $a^{0,1}$ or under $t=1$ (any q,a) is perfect.

In the case $\mathcal{R}=\mathbb{C}[[z^6,z^9+z^{16}]]$, where $\Gamma=\langle 6,9,25\rangle,\delta=27$ and the corresponding link is $Cab(25,3)T(3,2)$, (exactly) one new type of cells $J_{\mathcal{R}}[D]$ appears. There is a unique cell of the following kind:

$$D^\dagger=\{3,10,13,20,23\},\ |D|=18,\ dim=16,\ J_{\mathcal{R}}[D]\cong A_1\cup A_2\cup A_3,$$
$$A_i\cong\mathbb{A}^{16}, A_1\cap A_2\cong\mathbb{A}^{15}\cong A_2\cap A_3, A_1\cap A_2\cap A_3=A_1\cap A_3\cong\mathbb{A}^{14}.$$

Accordingly, its contribution to the geometric superpolynomial equals $aq^{18}(3t^{11}-2t^{12})$; $11=\delta-16=27-16$. The new types for 2–flags are of the same kind; they (and their contributions) are as follows:

$$D_0^\dagger=\{10,13,20,23\},\quad D_1^\dagger=\{3,10,13,20,23\},\ dim=17,\quad aq^{18}(3t^{10}-2t^{11}),$$
$$D_0^\dagger=\{3,10,13,20,23\},\quad D_1^\dagger=\{3,10,13,14\},\ dim=17,\quad aq^{19}(3t^{10}-2t^{11}),$$
$$D_0^\dagger=\{3,10,13,20,23\},\ D_1^\dagger=\{3,10,13,17,20\},\ dim=16,\quad aq^{19}(3t^{11}-2t^{12}).$$

The number of all non-affine cells is 62 $(m=0,1)$ in this case; the match with the DAHA-superpolynomial at $a^{0,1}$ is perfect for this $\mathcal{R}$.The similarity with the previous $1+3$ "new cells" for $\mathbb{C}[[z^6,z^9+z^{14}]]$ of type $2(\mathbb{A}^N\setminus\mathbb{A}^{N-1})$ is hardly accidental; indeed, we just add 23 to $D_{0,1}$.

We performed the same calculation (and the check vs. DAHA) for $\mathbb{C}[[z^6,z^9+z^{17}]]$ (which took about 300 min). The total number of non-affine cells becomes 85 $(m=0,1)$ and no "new types" appear vs. the previous $\mathcal{R}$. The total number of $\mathcal{D}$–flags for $m=0,1$ is 3102. Due to our extensive numerical experiments, we expect that non-affine Piontkowski cells can be only as described above (4 types) for the whole family $\mathcal{R}=\mathbb{C}[[z^6,z^9+z^{3p\pm1}]]$ with any $p\geq 4$.

Appendix B. Dimensions for (6,9,13)

In the case of $\mathcal{R} = \mathbb{C}[[z^6, z^9 + z^{13}]]$ with $\Gamma = \langle 6, 9, 22\rangle$, we will provide all dimensions $\dim J_{\mathcal{R}}^{m=0,1}[\mathcal{D}]$. The corresponding exponents are $(6, 9, 13)$ in this case. Importantly, the cells $J_{\mathcal{R}}^{m=0,1}[\mathcal{D}]$ are not always affine; use Table 9 for $\Gamma = \langle 6, 9, 22\rangle$ for the list of non-affine cells in this case. The types and the "generic" dimension are sufficient to determine the corresponding contribution to the geometric superpolynomial.

The dimension tables for such $m = 0, 1$ (and the corresponding full DAHA superpolynomials) are also available upon request for $\mathcal{R} = \mathbb{C}[[z^6, z^9 + z^{14,16}]]$. We also constantly calculate the geometric superpolynomials for any m under $q = 1$ in these and all considered examples, which will not be provided.

Only $D_0^\dagger$ or $D_1^\dagger$ are shown in the table followed by the corresponding dimensions and $|D_0|$ (after $\dim J_{\mathcal{R}}[D_0]$) for the lines without "+". We note that $|D_0|$ is needed to be shown since it is not immediate to calculate it in terms of primitive $D_0^\dagger$, though the latter of course uniquely determines D_0. For the lines with "+", we put $D_1^\dagger$ followed by $\dim J_{\mathcal{R}}^{m=1}[D_0, D_1]$; recall that $|D_1| = |D_0| + 1$. The corresponding $D_0^\dagger$ must be taken from the *closest previous entry* without "+".

We fill the first row, then the second and so on; by *na* we mean *non-admissible* D–flags (which do not contribute to the superpolynomial).

Let us mention that Tables 8, 9 are actually special cases of the the below table. For instance, $\dim J_{\mathcal{R}}[D] = 16$ for D corresponding to $D^\dagger = \{3, 10, 13, 20, 23\}$ (find below this $D^\dagger$ in lines without +), which contribute $q^{15}(2t^8 - t^9)$ according to Tables 8, 9. If this cell were affine, it would result in pure $q^{15}t^8$, where $8 = \delta - \dim_{\mathbb{C}} J_{\mathcal{R}}[D] = 24 - 16$.

The match with the corresponding coefficients of DAHA superpolynomial is perfect, as well as in the case of $\Gamma = \langle 6, 9, 23\rangle$ (which will not be discussed here). The dimensions are provided below. Note that there are exactly 5 pairs $\{D_0, D_1\}$ of maximal cell-dimension $\delta = 24$:

$$\{[\emptyset], [47]\}\ ,\ \{[47], [38, 47]\}\ ,\ \{[38, 47], [25, 38, 47]\},$$
$$\{[25, 38, 47], [16, 25, 38, 47]\}\ ,\ \{[16, 25, 38, 47], [3, 16, 25, 38, 47]\},$$

which contribute $a(q + q^2 + q^3 + q^4 + q^5)$ to the superpolynomial from Section A.3. In terms of the primitive $D^\dagger$ in the flags (used in the table below instead of the "complete" D) they are:

$$\{\{\,\},\{47\}\},\{\{47\},\{38\}\},\{\{38\},\{25,38\}\},\{\{25,38\},\{16\}\},\{\{16\},\{3,16\}\}.$$

The table of dimensions for $\Gamma = \langle 6, 9, 22\rangle$ is as follows:

{ } : 24,0	+{ 47}: 24	{ 47} : 23,1
+{ 25}: na	+{ 38}: 24	+{ 41}: 23
{ 25} : na,2	{ 38} : 23,2	+{ 25, 38}: 24
+{ 38, 41}: 23	{ 41} : 22,2	+{ 25, 41}: na
+{ 35}: 23	+{ 38, 41}: 22	{ 3} : na,3
{ 25, 38} : 23,3	+{ 3, 38}: na	+{ 16}: 24
+{ 25, 38, 41}: 23	{ 25, 41} : na,3	{ 35} : 22,3
+{ 25, 35}: 23	+{ 35, 38}: 22	{ 38, 41} : 21,3
+{ 25, 38, 41}: 23	+{ 32}: 22	+{ 35, 38}: 21
{ 3, 38} : na,4	{ 3, 41} : na,4	{ 16} : 23,4
+{ 3, 16}: 24	+{ 16, 41}: 23	{ 19} : na,4
{ 25, 35} : 22,4	+{ 3, 35}: na	+{ 19, 35}: 23
+{ 25, 35, 38}: 22	{ 25, 38, 41} : 22,4	+{ 3, 38, 41}: na
+{ 16, 41}: 23	+{ 19, 38}: na	+{ 25, 32}: 23
+{ 25, 35, 38}: 22	{ 32} : 21,4	+{ 25, 32}: 22
+{ 32, 35}: 21	{ 35, 38} : 20,4	+{ 25, 35, 38}: 22
+{ 29}: 21	+{ 32, 35}: 20	{ 3, 16} : 23,5
+{ 3, 16, 41}: 23	{ 3, 19} : na,5	{ 3, 35} : na,5
{ 3, 38, 41} : na,5	{ 16, 41} : 22,5	+{ 3, 16, 41}: 23
+{ 16, 19}: na	+{ 16, 32}: 23	+{ 16, 35}: 22
{ 19, 35} : 22,5	+{ 3, 19, 35}: na	+{ 13}: 23
+{ 19, 35, 38}: 22	{ 19, 38} : na,5	{ 25, 32} : 21,5
+{ 3, 32}: na	+{ 16, 32}: 23	+{ 19, 32}: 22
+{ 25, 32, 35}: 21	{ 25, 35, 38} : 21,5	+{ 3, 35, 38}: na
+{ 16, 35}: 22	+{ 19, 35, 38}: 22	+{ 25, 29}: 22
+{ 25, 32, 35}: 21	{ 29} : 20,5	+{ 25, 29}: 21
+{ 29, 32}: 20	{ 32, 35} : 19,5	+{ 25, 32, 35}: 21
+{ 26}: 20	+{ 29, 32}: 19	{ 3, 16, 41} : 22,6
+{ 3, 16, 19}: na	+{ 3, 16, 32}: 23	+{ 3, 16, 35}: 22
{ 3, 19, 35} : na,6	{ 3, 19, 38} : na,6	{ 3, 32} : na,6
{ 3, 35, 38} : na,6	{ 13} : 22,6	+{ 3, 13}: 23
+{ 13, 38}: 22	{ 16, 19} : na,6	{ 16, 32} : 22,6
+{ 3, 16, 32}: 23	+{ 16, 19, 32}: 23	+{ 16, 32, 35}: 22
{ 16, 35} : 21,6	+{ 3, 16, 35}: 22	+{ 16, 19, 35}: na
+{ 16, 29}: 22	+{ 16, 32, 35}: 21	{ 19, 32} : 21,6
+{ 3, 19, 32}: na	+{ 16, 19, 32}: 22	+{ 19, 32, 35}: 21
{ 19, 35, 38} : 21,6	+{ 3, 19, 35, 38}: na	+{ 13, 38}: 22
+{ 16, 19, 35}: na	+{ 19, 29}: 22	+{ 19, 32, 35}: 21

{ 25, 29} : 20,6	+{ 3, 29}: na	+{ 16, 29}: 22
+{ 19, 29}: 21	+{ 25, 29, 32}: 20	{ 25, 32, 35} : 20,6
+{ 3, 32, 35}: na	+{ 16, 32, 35}: 21	+{ 19, 32, 35}: 21
+{ 25, 26}: 21	+{ 25, 29, 32}: 20	{ 26} : 19,6
+{ 25, 26}: 20	+{ 26, 29}: 19	{ 29, 32} : 18,6
+{ 23}: 20	+{ 25, 29, 32}: 19	+{ 26, 29}: 18
{ 3, 13} : 22,7	+{ 3, 13, 38}: 22	{ 3, 16, 19} : na,7
{ 3, 16, 32} : 22,7	+{ 3, 16, 19, 32}: 23	+{ 3, 16, 32, 35}: 22
{ 3, 16, 35} : 21,7	+{ 3, 16, 19, 35}: na	+{ 3, 16, 29}: 22
+{ 3, 16, 32, 35}: 21	{ 3, 19, 32} : na,7	{ 3, 19, 35, 38} : na,7
{ 3, 29} : na,7	{ 3, 32, 35} : na,7	{ 13, 38} : 21,7
+{ 3, 13, 38}: 22	+{ 13, 16}: na	+{ 13, 29}: 22
+{ 13, 32}: 21	{ 16, 19, 32} : 21,7	+{ 3, 16, 19, 32}: 23
+{ 10}: 22	+{ 16, 19, 32, 35}: 21	{ 16, 19, 35} : na,7
{ 16, 29} : 21,7	+{ 3, 16, 29}: 22	+{ 16, 19, 29}: 22
+{ 16, 29, 32}: 21	{ 16, 32, 35} : 20,7	+{ 3, 16, 32, 35}: 21
+{ 16, 19, 32, 35}: 22	+{ 16, 26}: 21	+{ 16, 29, 32}: 20
{ 19, 29} : 20,7	+{ 3, 19, 29}: na	+{ 13, 29}: 22
+{ 16, 19, 29}: 21	+{ 19, 29, 32}: 20	{ 19, 32, 35} : 20,7
+{ 3, 19, 32, 35}: na	+{ 13, 32}: 21	+{ 16, 19, 32, 35}: 21
+{ 19, 26}: 21	+{ 19, 29, 32}: 20	{ 23} : 19,7
+{ 23, 25}: 20	+{ 23, 26}: 19	{ 25, 26} : 19,7
+{ 3, 26}: na	+{ 16, 26}: 21	+{ 19, 26}: 20
+{ 25, 26, 29}: 19	{ 25, 29, 32} : 18,7	+{ 3, 29, 32}: na
+{ 16, 29, 32}: 20	+{ 19, 29, 32}: 20	+{ 23, 25}: 19
+{ 25, 26, 29}: 18	{ 26, 29} : 17,7	+{ 20}: 19
+{ 23, 26}: 18	+{ 25, 26, 29}: 17	{ 3, 13, 38} : 21,8
+{ 3, 13, 16}: na	+{ 3, 13, 29}: 22	+{ 3, 13, 32}: 21
{ 3, 16, 19, 32} : 22,8	+{ 3, 10}: 23	+{ 3, 16, 19, 32, 35}: 22
{ 3, 16, 19, 35} : na,8	{ 3, 16, 29} : 21,8	+{ 3, 16, 19, 29}: 22
+{ 3, 16, 29, 32}: 21	{ 3, 16, 32, 35} : 20,8	+{ 3, 16, 19, 32, 35}: 22
+{ 3, 16, 26}: 21	+{ 3, 16, 29, 32}: 20	{ 3, 19, 29} : na,8
{ 3, 19, 32, 35} : na,8	{ 3, 26} : na,8	{ 3, 29, 32} : na,8
{ 10} : 21,8	+{ 3, 10}: 22	+{ 10, 35}: 21
{ 13, 16} : na,8	{ 13, 29} : 21,8	+{ 3, 13, 29}: 22
+{ 13, 16, 29}: 22	+{ 13, 29, 32}: 21	{ 13, 32} : 20,8
+{ 3, 13, 32}: 21	+{ 13, 16, 32}: na	+{ 13, 26}: 21
+{ 13, 29, 32}: 20	{ 16, 19, 29} : 20,8	+{ 3, 16, 19, 29}: 22
+{ 13, 16, 29}: 21	+{ 16, 19, 29, 32}: 20	{ 16, 19, 32, 35} : 20,8
+{ 3, 16, 19, 32, 35}: 22	+{ 10, 35}: 21	+{ 13, 16, 32}: na
+{ 16, 19, 26}: 21	+{ 16, 19, 29, 32}: 20	{ 16, 26} : 20,8
+{ 3, 16, 26}: 21	+{ 16, 19, 26}: 21	+{ 16, 26, 29}: 20
{ 16, 29, 32} : 19,8	+{ 3, 16, 29, 32}: 20	+{ 16, 19, 29, 32}: 21
+{ 16, 23}: 20	+{ 16, 26, 29}: 19	{ 19, 26} : 19,8
+{ 3, 19, 26}: na	+{ 13, 26}: 21	+{ 16, 19, 26}: 20

+{ 19, 26, 29}: 19
+{ 13, 29, 32}: 20
+{ 19, 26, 29}: 19
+{ 20, 25}: 18
+{ 16, 23}: 20
{ 23, 26} : 17,8
+{ 23, 25, 26}: 17
+{ 16, 26, 29}: 19
+{ 23, 25, 26}: 16
{ 3, 13, 16} : na,9
+{ 3, 13, 29, 32}: 21
+{ 3, 13, 26}: 21
+{ 3, 13, 16, 29}: 22
+{ 3, 10, 35}: 22
+{ 3, 16, 19, 29, 32}: 21
+{ 3, 16, 26, 29}: 20
+{ 3, 16, 23}: 20
{ 3, 19, 29, 32} : na,9
{ 10, 35} : 20,9
+{ 10, 26}: 21
+{ 3, 13, 16, 29}: 22
{ 13, 16, 32} : na,9
+{ 13, 16, 26}: 21
+{ 3, 13, 29, 32}: 20
+{ 13, 26, 29}: 19
+{ 10, 26}: 21
{ 16, 19, 29, 32} : 19,9
+{ 13, 16, 29, 32}: 20
{ 16, 23} : 19,9
+{ 16, 23, 26}: 19
+{ 16, 19, 26, 29}: 20
{ 17} : 18,9
{ 19, 23} : 18,9
+{ 16, 19, 23}: 19
+{ 3, 19, 26, 29}: na
+{ 19, 20}: 18
+{ 14}: 19
{ 20, 25} : 16,9
+{ 19, 20}: 17
+{ 3, 23, 26}: na
+{ 19, 23, 26}: 16
+{ 3, 10, 13}: na
{ 3, 13, 16, 29} : 21,10
{ 3, 13, 16, 32} : na,10
+{ 3, 13, 26, 29}: 20

{ 19, 29, 32} : 19,8
+{ 16, 19, 29, 32}: 20
{ 20} : 18,8
{ 23, 25} : 18,8
+{ 19, 23}: 19
+{ 17}: 19
{ 25, 26, 29} : 16,8
+{ 19, 26, 29}: 18
{ 3, 10} : 21,9
{ 3, 13, 29} : 21,9
{ 3, 13, 32} : 20,9
+{ 3, 13, 29, 32}: 20
+{ 3, 16, 19, 29, 32}: 21
+{ 3, 13, 16, 32}: na
{ 3, 16, 26} : 20,9
{ 3, 16, 29, 32} : 19,9
+{ 3, 16, 26, 29}: 19
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(I. Cherednik) Department of Mathematics, UNC Chapel Hill, North Carolina 27599, USA, chered@email.unc.edu

(I. Philipp) Department of Mathematics, UNC Chapel Hill, North Carolina 27599, USA, iphilipp@live.unc.edu