Mutation classes of quivers with constant number of arrows and derived equivalences

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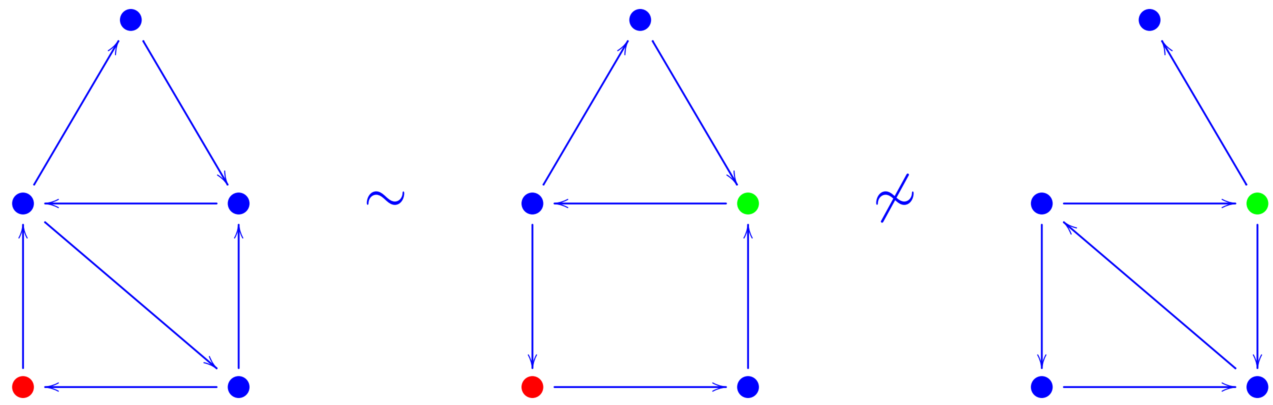
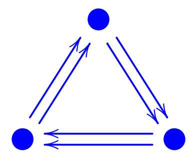
Example – number of arrows vs. derived equivalence



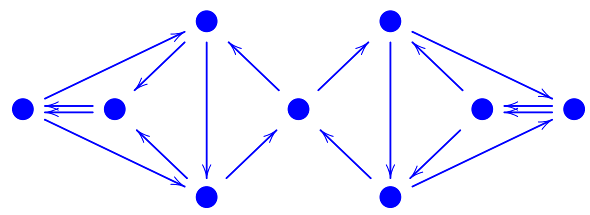
The Jacobian algebras are cluster-tilted of Dynkin type D_5.

Representative quivers in $\mathcal{Q}_{g,0}$ for $g = 1, 2, 3, 4$

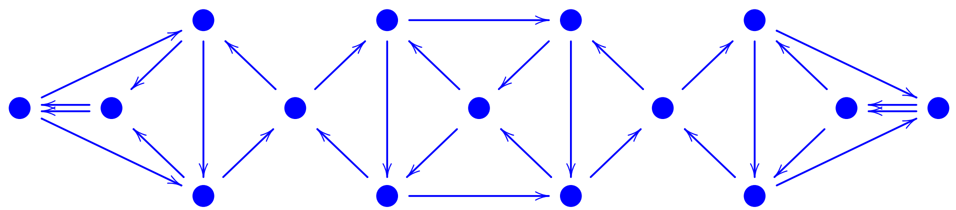
$(1, 0)$



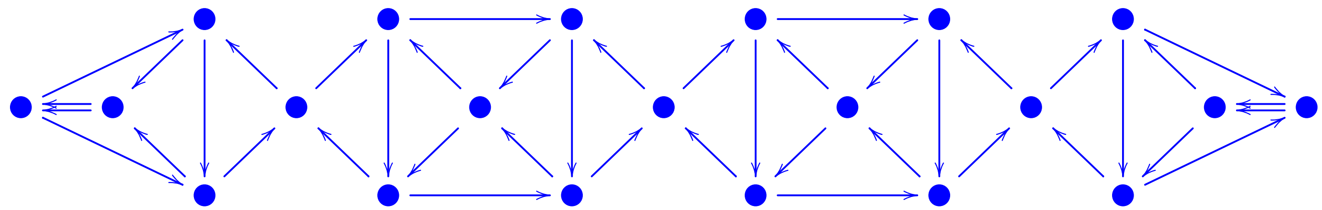
$(2, 0)$



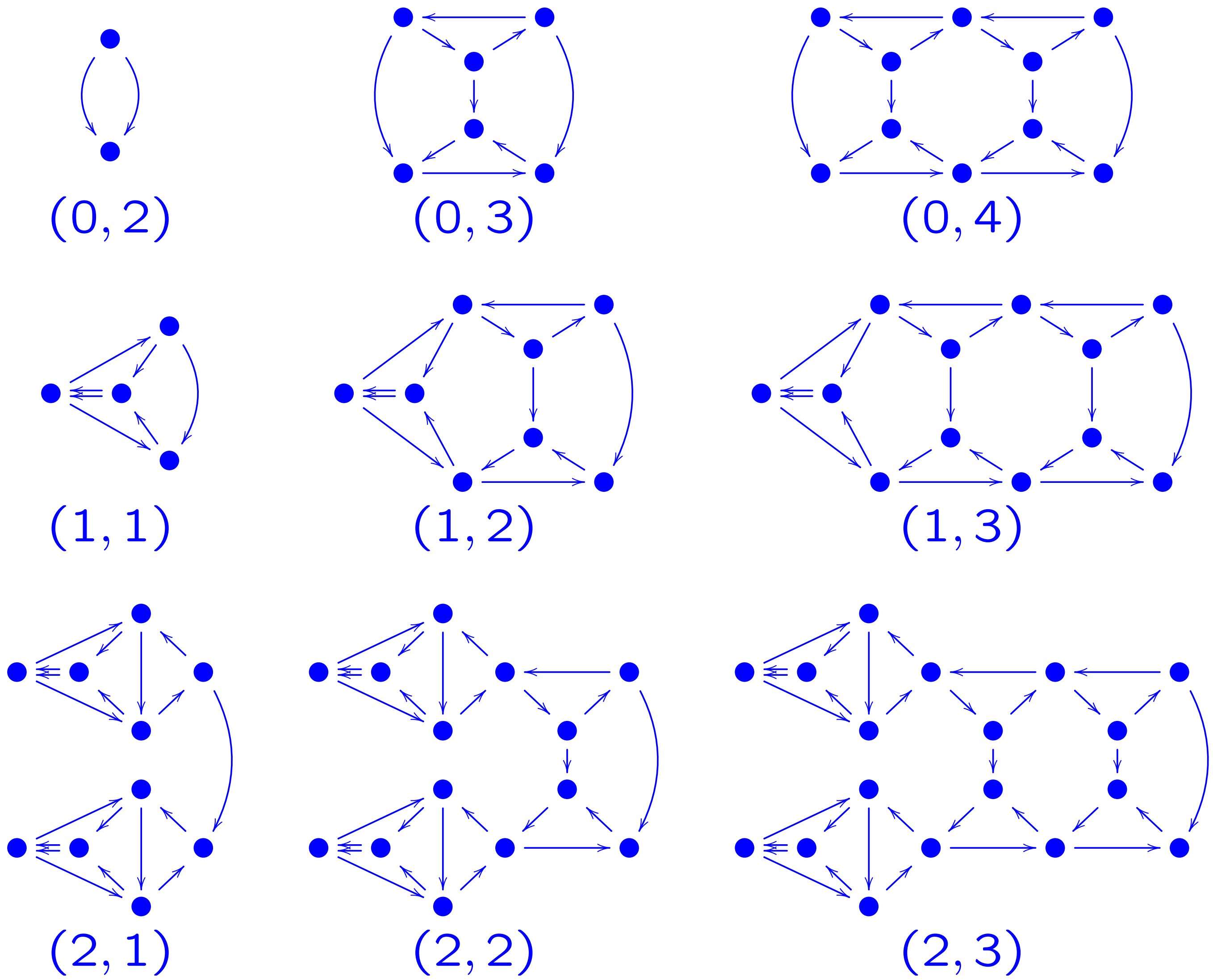
$(3, 0)$



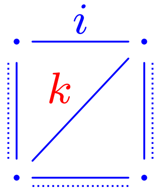
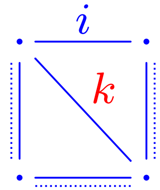
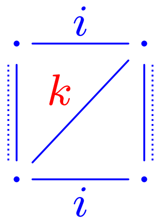
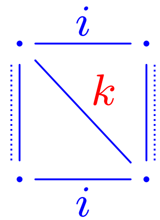
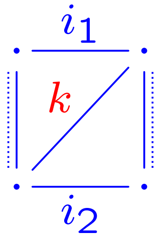
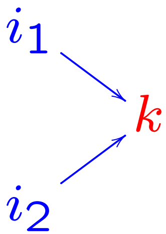
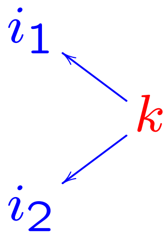
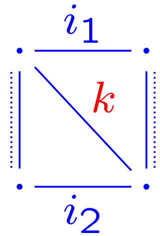
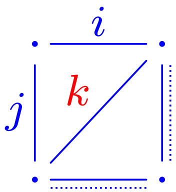
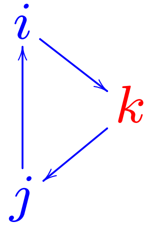
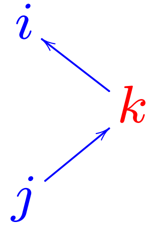
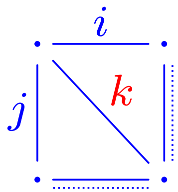
$(4, 0)$



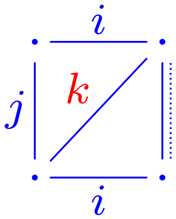
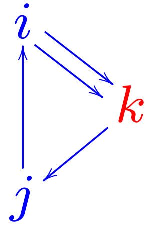
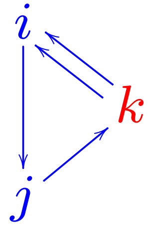
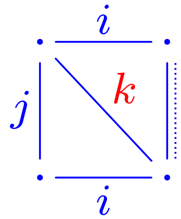
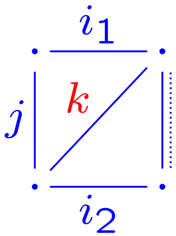
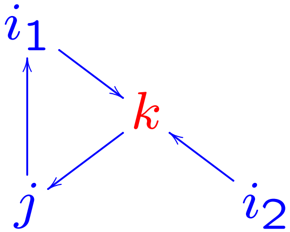
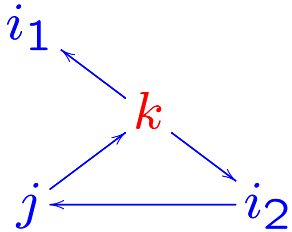
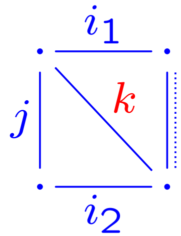
Representative quivers for some $\mathcal{Q}_{g,b}$ ($b \geq 1$)



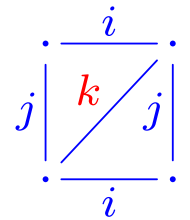
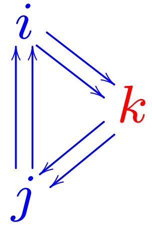
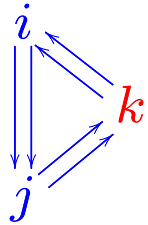
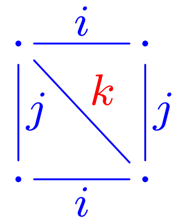
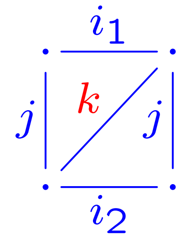
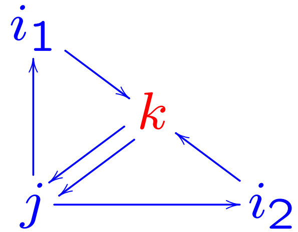
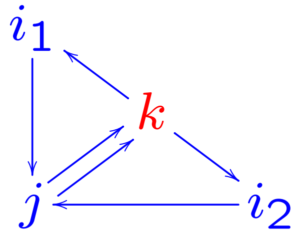
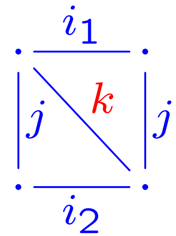
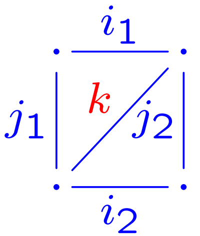
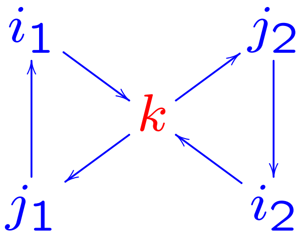
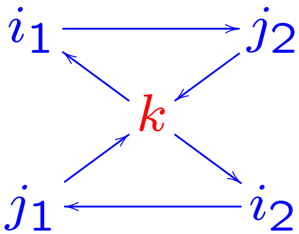
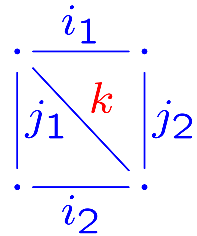
Neighborhoods of k, valency ≤ 2

1		$i \to k$	μ_k^-	μ_k^+	$i \leftarrow k$	
$2a$		$i \rightrightarrows k$	μ_k^-	μ_k^+	$i \leftleftarrows k$	
$2b$			μ_k^-	μ_k^+		
$2c$		 $a_{ji} \geq 1$	none	μ_k^-, μ_k^+	 $a_{ij} = 0$	

Neighborhoods of k, valency 3

$3a$		 $a_{ji} = 1$	μ_k^-	μ_k^+	 $a_{ij} = 1$	
$3b$		 $a_{ji_1} \geq 1$ $a_{ji_2} = 0$	μ_k^-	μ_k^+	 $a_{i_1 j} = 0$ $a_{i_2 j} \geq 1$	

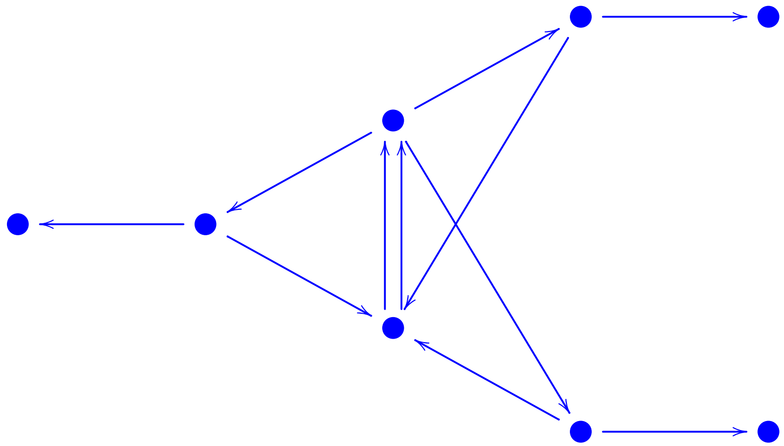
Neighborhoods of k, valency 4 (all sides are arcs)

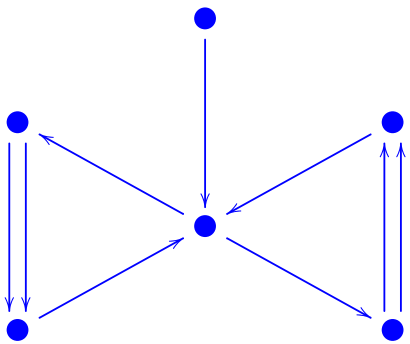
$4a$				
$4b$		 $a_{ji_1} = a_{ji_2} = 1$	 $a_{i_1 j} = a_{i_2 j} = 1$	
$4c$		 $a_{j_1 i_1}, a_{j_2 i_2} \geq 1$ $a_{j_1 i_2} = a_{j_2 i_1} = 0$	 $a_{i_1 j_2}, a_{i_2 j_1} \geq 1$ $a_{i_1 j_1} = a_{i_2 j_2} = 0$	

Both μ_k^- and μ_k^+ are always defined.

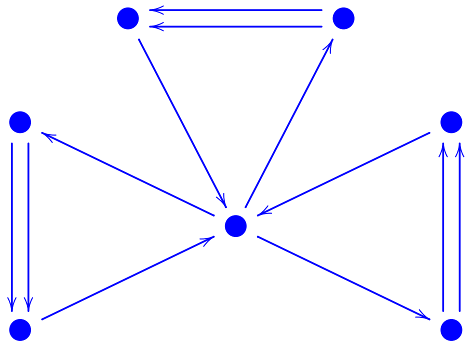
Some exceptional quivers

$E_6^{(1,1)}$





X_6



X_7