

## 5.423 zero\_or\_not\_zero\_vectors

	DESCRIPTION	LINKS
<b>Origin</b>	Tournament scheduling	
<b>Constraint</b>	<code>zero_or_not_zero_vectors(VECTORS)</code>	
<b>Synonyms</b>	<code>zeros_or_not_zeros_vectors,</code> <code>not_zero_or_zero_vectors,</code> <code>not_zeros_or_zeros_vectors.</code>	
<b>Type</b>	VECTOR : <code>collection(var-dvar)</code>	
<b>Argument</b>	VECTORS : <code>collection(vec - VECTOR)</code>	
<b>Restrictions</b>	$ \text{VECTOR}  \geq 1$ <code>required(VECTOR, var)</code> $ \text{VECTORS}  \geq 1$ <code>required(VECTORS, vec)</code> <code>same_size(VECTORS, vec)</code>	
<b>Purpose</b>	<div style="border: 1px solid pink; padding: 5px;">           Given a collection of vectors enforces for each vector that either all its components are equal to 0, or all its components are different from 0. In addition imposes that at least one 0 is used.         </div>	
<b>Example</b>	<div style="border: 1px solid blue; padding: 10px; display: inline-block;"> <math display="block">\left( \begin{array}{c} \text{vec} - \langle 5, 6 \rangle, \\ \text{vec} - \langle 5, 6 \rangle, \\ \langle \text{vec} - \langle 0, 0 \rangle, \rangle \\ \text{vec} - \langle 9, 3 \rangle, \\ \text{vec} - \langle 0, 0 \rangle \end{array} \right)</math> </div> <p>The <code>zero_or_not_zero_vectors</code> constraint holds since:</p> <ul style="list-style-type: none"> <li>• Both components of the first vector <math>\langle 5, 6 \rangle</math> are different from 0.</li> <li>• Both components of the second vector <math>\langle 5, 6 \rangle</math> are different from 0.</li> <li>• Both components of the third vector <math>\langle 0, 0 \rangle</math> are equal to 0.</li> <li>• Both components of the fourth vector <math>\langle 9, 3 \rangle</math> are different from 0.</li> <li>• Both components of the fifth vector <math>\langle 0, 0 \rangle</math> are equal to 0.</li> </ul>	
<b>Typical</b>	$ \text{VECTOR}  > 1$ $ \text{VECTORS}  > 1$	
<b>Arg. properties</b>	<code>Contractible</code> wrt. VECTORS.	
<b>Keywords</b>	<b>characteristic of a constraint:</b> <code>vector</code> . <b>constraint type:</b> <code>predefined constraint</code> , <code>arithmetic constraint</code> .	