

# Test cases for pgfplotstable

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## 1 Reading a tab-separated table with many entries

### 1.1 Reading it...

### 1.2 Quering colnames...

Column "G"  
Column "Basis"  
Column "dof"  
Column "L2"  
Column "A"  
Column "Lmax"  
Column "cgiter"  
Column "maxlevel"  
Column "eps"

### 1.3 Quering column content by column name

Row data: "8.31160034e-02"  
Row data: "2.54685628e-02"  
Row data: "7.40715288e-03"  
Row data: "2.10192154e-03"  
Row data: "5.87352989e-04"  
Row data: "1.62269942e-04"  
Row data: "4.44248889e-05"  
Row data: "1.20714122e-05"  
Row data: "3.26101452e-06"

### 1.4 Quering column content by column name for all cols

Column "G"  
Row data: "5"  
Row data: "17"  
Row data: "49"  
Row data: "129"  
Row data: "321"  
Row data: "769"  
Row data: "1793"

G	\$flags	int:0	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
		int:0	int:0	int:0	sci[subscript]:8		sci[subscript]:8		sci[subscript]:8	
5		5	5	5	8.31160034e-02	0.00000000e+00	1.80007647e-01	2	2	-1
17		17	17	17	2.54685628e-02	0.00000000e+00	3.75580565e-02	5	3	-1
49		49	49	49	7.40715288e-03	0.00000000e+00	1.49212716e-02	11	4	-1
129		129	129	129	2.10192154e-03	0.00000000e+00	4.23330523e-03	26	5	-1
321		321	321	321	5.87352989e-04	0.00000000e+00	1.30668515e-03	43	6	-1
769		769	769	769	1.62269942e-04	0.00000000e+00	3.88658098e-04	49	7	-1
1793		1793	1793	1793	4.44248889e-05	0.00000000e+00	1.12651668e-04	52	8	-1
4097		4097	4097	4097	1.20714122e-05	0.00000000e+00	3.20339285e-05	56	9	-1
9217		9217	9217	9217	3.26101452e-06	0.00000000e+00	8.97617707e-06	59	10	-1

Row data: "4097"  
 Row data: "9217"  
**Column "Basis"**  
 Row data: "5"  
 Row data: "17"  
 Row data: "49"  
 Row data: "129"  
 Row data: "321"  
 Row data: "769"  
 Row data: "1793"  
 Row data: "4097"  
 Row data: "9217"  
**Column "dof"**  
 Row data: "5"  
 Row data: "17"  
 Row data: "49"  
 Row data: "129"  
 Row data: "321"  
 Row data: "769"  
 Row data: "1793"  
 Row data: "4097"  
 Row data: "9217"  
**Column "L2"**  
 Row data: "8.31160034e-02"  
 Row data: "2.54685628e-02"  
 Row data: "7.40715288e-03"  
 Row data: "2.10192154e-03"  
 Row data: "5.87352989e-04"  
 Row data: "1.62269942e-04"  
 Row data: "4.44248889e-05"  
 Row data: "1.20714122e-05"  
 Row data: "3.26101452e-06"  
**Column "A"**  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
 Row data: "0.00000000e+00"  
**Column "Lmax"**  
 Row data: "1.80007647e-01"  
 Row data: "3.75580565e-02"  
 Row data: "1.49212716e-02"  
 Row data: "4.23330523e-03"  
 Row data: "1.30668515e-03"  
 Row data: "3.88658098e-04"  
 Row data: "1.12651668e-04"

Row data: "3.20339285e-05"

Row data: "8.97617707e-06"

**Column "cgiter"**

Row data: "2"

Row data: "5"

Row data: "11"

Row data: "26"

Row data: "43"

Row data: "49"

Row data: "52"

Row data: "56"

Row data: "59"

**Column "maxlevel"**

Row data: "2"

Row data: "3"

Row data: "4"

Row data: "5"

Row data: "6"

Row data: "7"

Row data: "8"

Row data: "9"

Row data: "10"

**Column "eps"**

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

Row data: "-1"

## 2 Reading gnuplot output for use in 'plot file'

```
#Curve 0, 20 points
```

```
#x y type
```

```
0.00000 0.00000 i
```

```
0.52632 0.50235 i
```

```
1.05263 0.86873 i
```

```
1.57895 0.99997 i
```

```
9.47368 -0.04889 i
```

```
10.00000 -0.54402 i
```

### 2.1 Querying column content by column name for all cols

**Column "0"**

Row data: "0.00000"

Row data: "0.52632"

Row data: "1.05263"

Row data: "1.57895"

Row data: "9.47368"  
 Row data: "10.00000"  
**Column "1"**  
 Row data: "0.00000"  
 Row data: "0.50235"  
 Row data: "0.86873"  
 Row data: "0.99997"  
 Row data: "-0.04889"  
 Row data: "-0.54402"  
**Column "2"**  
 Row data: "i"  
 Row data: "i"  
 Row data: "i"  
 Row data: "i"  
 Row data: "i"  
 Row data: "i"

### 3 Table typesetting

#### 3.1 no options at all

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

#### 3.2 Basis, L2, no options

Basis	L2
5	$8.31 \cdot 10^{-2}$
17	$2.55 \cdot 10^{-2}$
49	$7.41 \cdot 10^{-3}$
129	$2.10 \cdot 10^{-3}$
321	$5.87 \cdot 10^{-4}$
769	$1.62 \cdot 10^{-4}$
1,793	$4.44 \cdot 10^{-5}$
4,097	$1.21 \cdot 10^{-5}$
9,217	$3.26 \cdot 10^{-6}$

### 3.3 some column adjustments

$l_\infty$	Basis	$L_2$	CG
2	5	8.31 <sub>-2</sub>	2
3	17	2.55 <sub>-2</sub>	5
4	49	7.41 <sub>-3</sub>	11
5	129	2.10 <sub>-3</sub>	26
6	321	5.87 <sub>-4</sub>	43
7	769	1.62 <sub>-4</sub>	49
8	1,793	4.44 <sub>-5</sub>	52
9	4,097	1.21 <sub>-5</sub>	56
10	9,217	3.26 <sub>-6</sub>	59

### 3.4 some row adjustments

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	8.31 <sub>-2</sub>	0	0.18	2	2	-1
17	17	17	2.55 <sub>-2</sub>	0	3.76 <sub>-2</sub>	5	3	-1
49	49	49	7.41 <sub>-3</sub>	0	1.49 <sub>-2</sub>	11	4	-1
129	129	129	2.10 <sub>-3</sub>	0	4.23 <sub>-3</sub>	26	5	-1
321	321	321	5.87 <sub>-4</sub>	0	1.31 <sub>-3</sub>	43	6	-1
769	769	769	1.62 <sub>-4</sub>	0	3.89 <sub>-4</sub>	49	7	-1
1,793	1,793	1,793	4.44 <sub>-5</sub>	0	1.13 <sub>-4</sub>	52	8	-1
4,097	4,097	4,097	1.21 <sub>-5</sub>	0	3.20 <sub>-5</sub>	56	9	-1
9,217	9,217	9,217	3.26 <sub>-6</sub>	0	8.98 <sub>-6</sub>	59	10	-1

### 3.5 coloring rows

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.5.1 writing to numtabletest.generated1.tex

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.5.2 loading numtabletest.generated1.tex

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

## 3.6 Choosing columns by index

Lmax	dof	G
0.18	5	5
$3.76 \cdot 10^{-2}$	17	17
$1.49 \cdot 10^{-2}$	49	49
$4.23 \cdot 10^{-3}$	129	129
$1.31 \cdot 10^{-3}$	321	321
$3.89 \cdot 10^{-4}$	769	769
$1.13 \cdot 10^{-4}$	1,793	1,793
$3.20 \cdot 10^{-5}$	4,097	4,097
$8.98 \cdot 10^{-6}$	9,217	9,217

### 3.7 column styles

G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.8 column styles + string type

	G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
one	5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
two	17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
three	49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
four	129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
five	321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
six	769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
with space	1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
eight	4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
nine	9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.9 column styles and special characters =/,

G	Basis	dof	$L_2$	A	Lmax	cgiter	maxlevel	eps	$L_2$ slopes
5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1	0.0
17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1	-1.0
49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1	-1.2
129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1	-1.3
321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1	-1.4
769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1	-1.5
1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1	-1.5
4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1	-1.6
9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1	-1.6



## 3.10 Input formats

### 3.10.1 comma

head	G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
one	5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
two	17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
three	49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
four	129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
five	321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
six	769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
with space	1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
eight	4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
nine	9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.10.2 colon

head	G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
one	5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
two	17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
three	49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
four	129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
five	321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
six	769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
with space	1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
eight	4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
nine	9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.10.3 semicolon

head	G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
one	5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
two	17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
three	49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
four	129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
five	321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
six	769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
with space	1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
eight	4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
nine	9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

### 3.10.4 brace

head	G	Basis	dof	L2	A	Lmax	cgiter	maxlevel	eps
one	5	5	5	$8.31 \cdot 10^{-2}$	0	0.18	2	2	-1
two	17	17	17	$2.55 \cdot 10^{-2}$	0	$3.76 \cdot 10^{-2}$	5	3	-1
three	49	49	49	$7.41 \cdot 10^{-3}$	0	$1.49 \cdot 10^{-2}$	11	4	-1
four	129	129	129	$2.10 \cdot 10^{-3}$	0	$4.23 \cdot 10^{-3}$	26	5	-1
five	321	321	321	$5.87 \cdot 10^{-4}$	0	$1.31 \cdot 10^{-3}$	43	6	-1
six	769	769	769	$1.62 \cdot 10^{-4}$	0	$3.89 \cdot 10^{-4}$	49	7	-1
with space	1,793	1,793	1,793	$4.44 \cdot 10^{-5}$	0	$1.13 \cdot 10^{-4}$	52	8	-1
eight	4,097	4,097	4,097	$1.21 \cdot 10^{-5}$	0	$3.20 \cdot 10^{-5}$	56	9	-1
nine	9,217	9,217	9,217	$3.26 \cdot 10^{-6}$	0	$8.98 \cdot 10^{-6}$	59	10	-1

## 4 Col type

9	2.50 <sub>-1</sub>
25	6.25 <sub>-2</sub>
81	1.56 <sub>-2</sub>
289	3.91 <sub>-3</sub>
1,089	9.77 <sub>-4</sub>
4,225	2.44 <sub>-4</sub>
16,641	6.10 <sub>-5</sub>
66,049	1.53 <sub>-5</sub>
263,169	3.81 <sub>-6</sub>
1,050,625	9.54 <sub>-7</sub>

## 5 Creating new columns

dof	L2	maxlevel	cgiter	new
5	$8.31 \cdot 10^{-2}$	2	2	this=2; next=3. (#0/9)
17	$2.55 \cdot 10^{-2}$	3	5	this=3; next=4. (#1/9)
49	$7.41 \cdot 10^{-3}$	4	11	this=4; next=5. (#2/9)
129	$2.10 \cdot 10^{-3}$	5	26	this=5; next=6. (#3/9)
321	$5.87 \cdot 10^{-4}$	6	43	this=6; next=7. (#4/9)
769	$1.62 \cdot 10^{-4}$	7	49	this=7; next=8. (#5/9)
1,793	$4.44 \cdot 10^{-5}$	8	52	this=8; next=9. (#6/9)
4,097	$1.21 \cdot 10^{-5}$	9	56	this=9; next=10. (#7/9)
9,217	$3.26 \cdot 10^{-6}$	10	59	this=10; next=. (#8/9)