

atlas-utils之丰度表转换： kann

一、atlas-utils kann介绍

功能描述：

`atlas-utils kann` 用丰度表以及特征映射表，将数值表转换成更高级分类的数值表；比如 `KO` 表转换成 `Pathway` 表。

命令行接口：

```
1 $ atlas-utils kann
2
3 Usage: atlas-utils kann [options] <feature-map|KO\tModule> <KO matrix>
4
5 Options:
6   -r    round value to nearest integer;
```

可选参数：

```
1   -r    四舍五入为整数；
```

二、使用场景实例及其用法

使用场景经典案例：

使用 `Picrust` 预测结果提升 `KEGG` 功能预测分类等级

示例演示：

示例文件： `ko.txt`， `ko-module.txt`

```
1 $ cat ko.txt | head
```

| | #KO | A-1 | A-2 | B-1 | B-2 | C-1 | C-2 |
|----|--------|----------------------|-----|----------------------|----------------------|----------------------|----------------------|
| 1 | K00001 | 0.000808980004315947 | | | 0.000819109861945028 | | 0.000612948680922169 |
| 2 | | 0.000635933480682086 | | 0.000559136968670103 | | 0.000542486474351325 | |
| 3 | K00002 | 7.72038380845697e-06 | | 7.22688422533568e-06 | | 2.49766518305712e-05 | |
| 4 | | 1.57502121695051e-05 | | 9.56550887982675e-05 | | 9.858089243293e-05 | |
| 5 | K00003 | 0.000587762479037045 | | 0.000592135220229698 | | 0.000519999878818898 | |
| 6 | | 0.000549497183764971 | | 0.000666059282177164 | | 0.000677436021110664 | |
| 7 | K00004 | 1.49014375653928e-05 | | 1.46178664834576e-05 | | 1.85089288332373e-05 | |
| 8 | | 2.31926009709905e-05 | | 8.68979017822108e-06 | | 8.51275477401169e-06 | |
| 9 | K00005 | 1.96858905532703e-05 | | 1.86794815743808e-05 | | 9.00123097627357e-05 | |
| 10 | | 9.40179323138053e-05 | | 0.00011454456970013 | | 0.000116547766601784 | |
| 11 | K00007 | 1.57188468162294e-06 | | 1.57702545666197e-06 | | 4.306311399988e-05 | |
| 12 | | 4.20634852153904e-05 | | 2.03978728434253e-05 | | 1.40124468713644e-05 | |
| 13 | K00008 | 0.000128769240001404 | | 0.000125523931713329 | | 9.53660568009489e-05 | |
| 14 | | 9.82964783346064e-05 | | 0.000107892704793437 | | 0.000104476113926683 | |
| 15 | K00009 | 1.18943528760527e-05 | | 1.1045799349361e-05 | | 7.61884286493077e-05 | |
| 16 | | 8.46489561836192e-05 | | 2.54266119345416e-05 | | 2.55950032624376e-05 | |
| 17 | K00010 | 0.000310116534051155 | | 0.000303045306800677 | | 0.000224283466136438 | |
| 18 | | 0.000235510886152397 | | 0.000265891761696196 | | 0.000264503288754388 | |

```
1 | $ cat ko-module.txt | head
```

| | | |
|----|--------|--------|
| 1 | K00844 | M00001 |
| 2 | K12407 | M00001 |
| 3 | K00845 | M00001 |
| 4 | K00886 | M00001 |
| 5 | K08074 | M00001 |
| 6 | K00918 | M00001 |
| 7 | K01810 | M00001 |
| 8 | K06859 | M00001 |
| 9 | K13810 | M00001 |
| 10 | K15916 | M00001 |

运行命令：将 ko表 转为 module表。

```
1 | $ atlas-utils kann ko-module.txt ko.txt | head
```

| | | | | | | | |
|----|----------|-------------|-------------|-----|-------------|------------|-----|
| 1 | #catalog | A-1 | A-2 | B-1 | B-2 | C-1 | C-2 |
| 2 | M00120 | 0.00164474 | 0.00163207 | | 0.00150454 | 0.00148803 | |
| | | 0.00191855 | 0.0019554 | | | | |
| 3 | M00121 | 0.00615696 | 0.00609589 | | 0.00587453 | 0.00603027 | |
| | | 0.00728818 | 0.00748394 | | | | |
| 4 | M00001 | 0.00716742 | 0.00709134 | | 0.00746521 | 0.00707085 | |
| | | 0.00839727 | 0.00851415 | | | | |
| 5 | M00002 | 0.00428334 | 0.00426116 | | 0.00478332 | 0.00460004 | |
| | | 0.00532464 | 0.00542467 | | | | |
| 6 | M00003 | 0.00544234 | 0.005411 | | 0.00593274 | 0.00569337 | |
| | | 0.00674525 | 0.00687093 | | | | |
| 7 | M00004 | 0.00558094 | 0.00551681 | | 0.00498883 | 0.00493894 | |
| | | 0.00596807 | 0.00603159 | | | | |
| 8 | M00005 | 0.000588987 | 0.000591029 | | 0.000583269 | 0.00057473 | |
| | | 0.000770807 | 0.000781147 | | | | |
| 9 | M00006 | 0.00179459 | 0.00175532 | | 0.00141255 | 0.00138986 | |
| | | 0.00156954 | 0.00157664 | | | | |
| 10 | M00007 | 0.00309689 | 0.00307266 | | 0.0027589 | 0.00276315 | |
| | | 0.00357884 | 0.00362954 | | | | |

注意事项: 设置 `-r` 参数, 小数转为整数。

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