

## Dirichlet prior

### Parametrization

This is a prior for  $(\gamma_1, \dots, \gamma_K)$ , where  $0 < \gamma_k < 1$  and  $\sum_{k=1}^K \gamma_k = 1$ . The density is

$$\pi(\gamma_1, \dots, \gamma_K) = \frac{\Gamma(K\alpha)}{\Gamma(\alpha)^K} \prod_{k=1}^K \gamma_k^{\alpha-1}$$

using a common  $\alpha$  for all  $k$ .

### Specification

This prior for the hyperparameters is specified inside the `hyper`-specification, as

```
hyper = list(<theta> = list(prior="dirichlet", param=<alpha>))
```

and the value of  $K$  is implicit for corresponding model.

### Example

#### Notes

This is an experimental prior-function. The normalizing constant wrt to the internal representation is correct only up to a multiplicative constant.