

## Dirichlet prior

### Parametrization

This is a prior for  $(\theta_1, \dots, \theta_K)$ , where  $0 < \theta_k < 1$  and  $\sum_{k=1}^K \theta_k = 1$ . The density is

$$\pi(\theta_1, \dots, \theta_K) = \frac{\Gamma(K\alpha)}{\Gamma(\alpha)^K} \prod_{k=1}^K \theta_k^{\alpha-1}$$

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 that model (see for example the likelihood model `"pom"`).

### Example

#### Notes

This is an experimental function, and the normalizing constant wrt to the internal representation might not be entirely correct. To be fixed in the future.