

# Reduce both cate and numerical

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3:02 PM

<https://github.com/cornellius-gp/gpytorch/issues/2072>

[Bug] Multi-input Multi-output GP with Variational Inference reporting Incorrect Variances #2072

When reduce categorical variable

$\text{Covar\_module1} = \text{cate\_kernel} * \text{numerical\_kernel}$

When further reduce cate and numerical

$\text{Covar\_module2} = \text{a single kernel}$

The input to  $\text{covar\_module1}$  is  $\text{cat}(\text{latent\_cate}, \text{original\_numerical})$

The input to  $\text{covar\_module2}$  is  $\text{latent\_total}$

But the task covar matrix for both  $\text{covar\_module1}$  and  $\text{covar\_module2}$  should be the same