# Week 9 Meeting

2357351G - MSci Half Project

What I've done this week

- Debugging volume issue with spectrogram embeddings.
- Implemented new audio/spectrogram normalisation and retrained spectrogram-VAE.
  - Training also included more DAFX and random parameter settings.
- Reconstructions were much better, however latent space doesn't seem to have as much structure.
- Tried some 'fine-tuning' by increasing the β weight to improve latent space - doesn't seem to make a huge difference.
- Created evaluation plan for report, and continued writing between tasks.
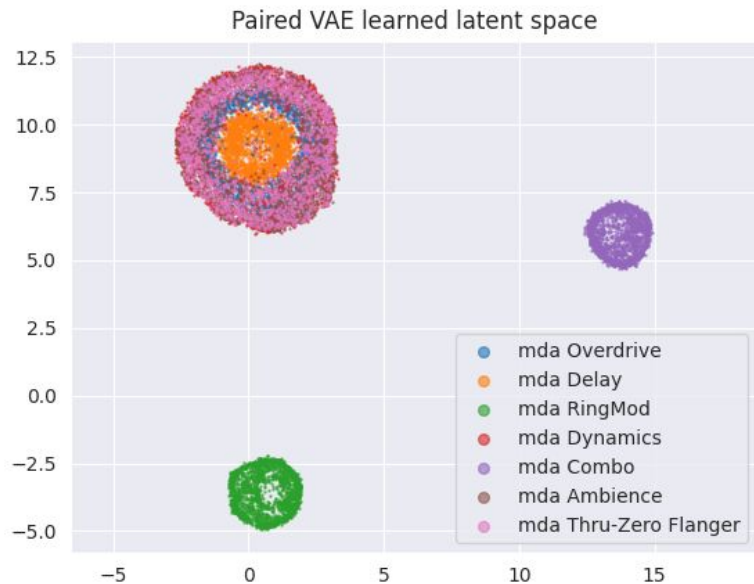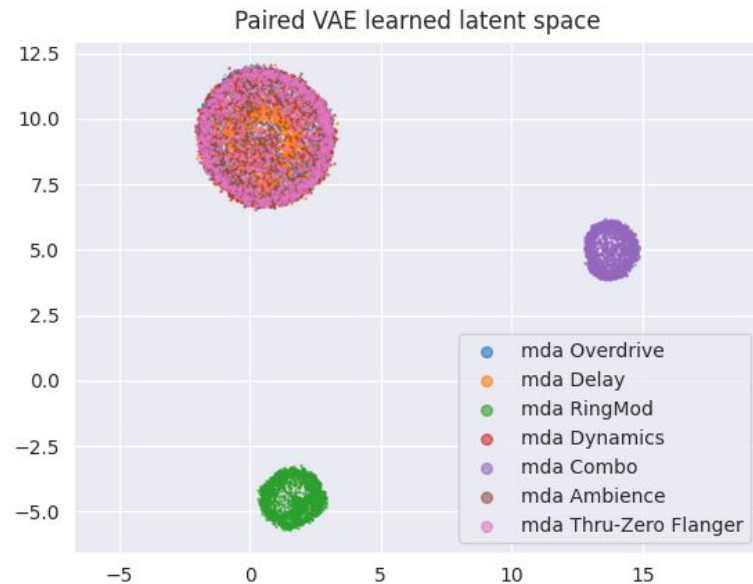
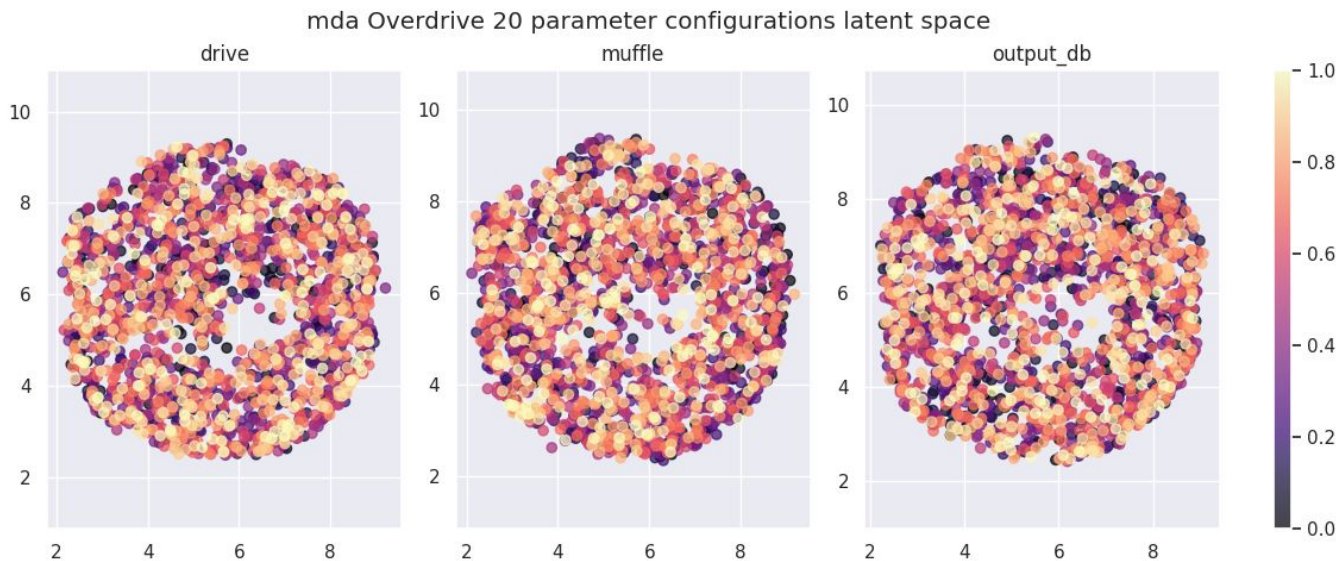# Latent space - 4 DAFX
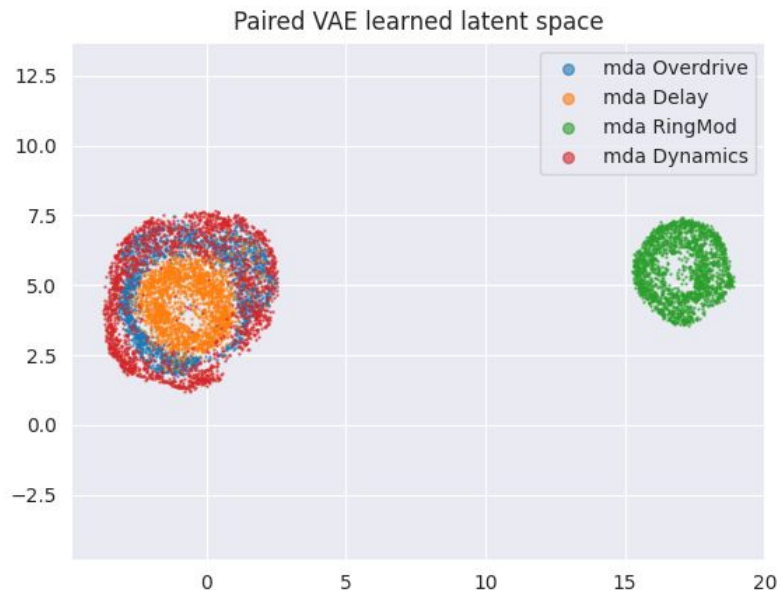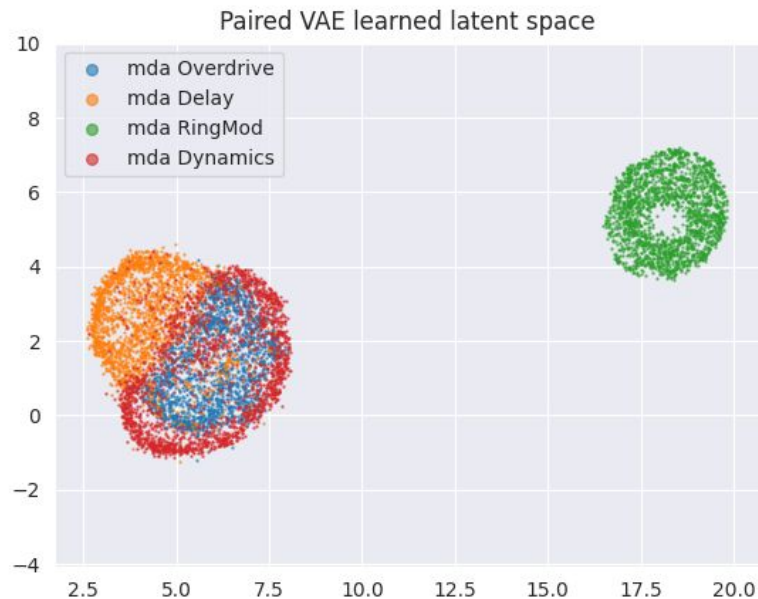
β = 0.05

β = 2.0

Latent space - 7 DAFX

β = 0.05

β = 2.0

Interpolation of Parameter Settings (Overdrive)

mda Overdrive 20 parameter configurations latent space

β = 0.05

Interpolation of Parameter Settings (Overdrive)

mda Overdrive 20 parameter configurations latent space
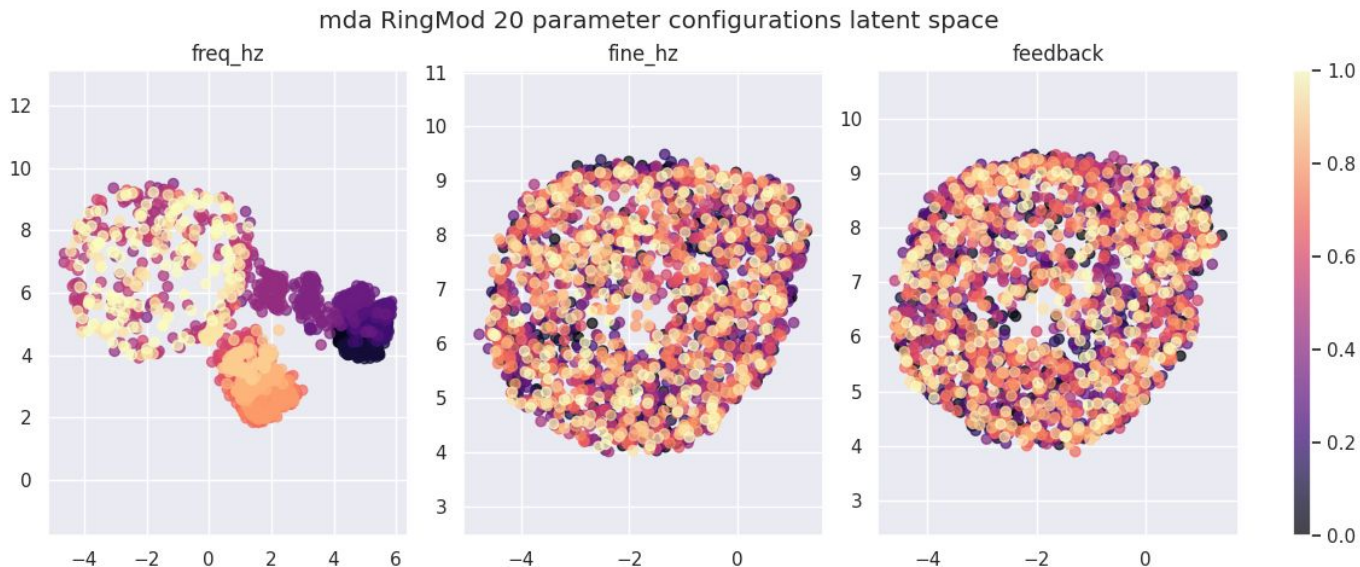
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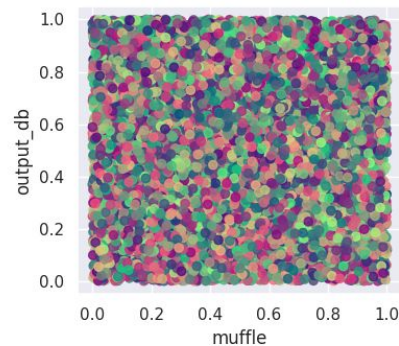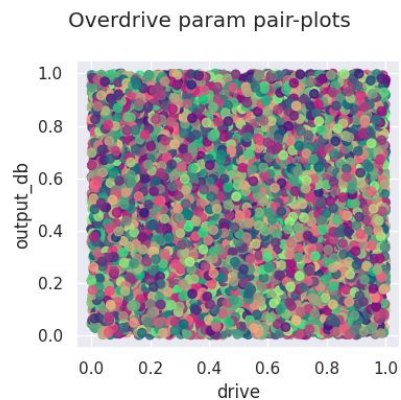# Interpolation of Parameter Settings (RingMod)

mda RingMod 20 parameter configurations latent space
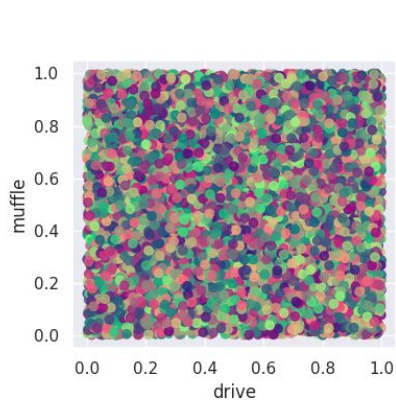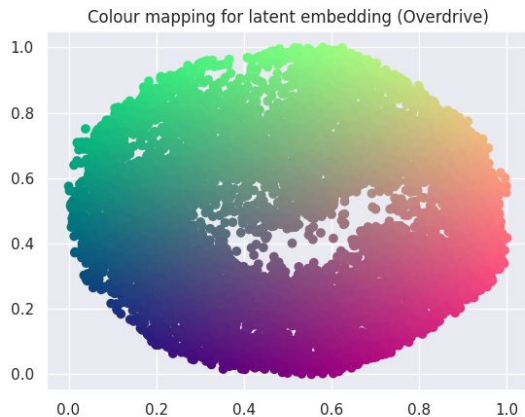
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Interpolation of Parameter Settings (RingMod)

mda RingMod 20 parameter configurations latent space
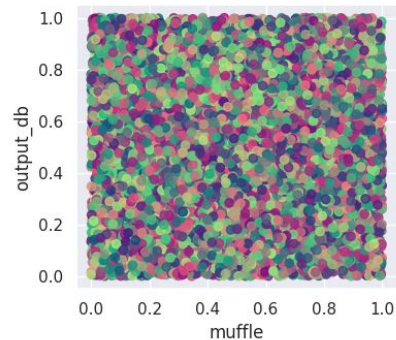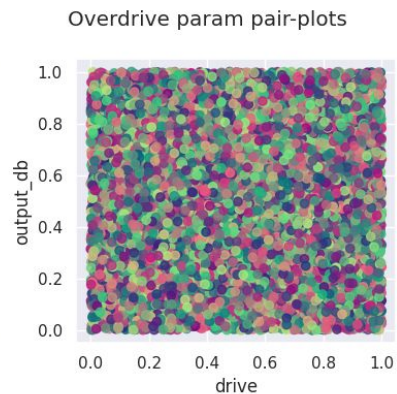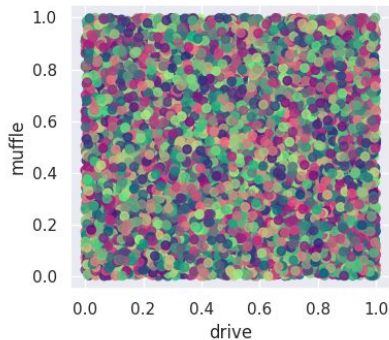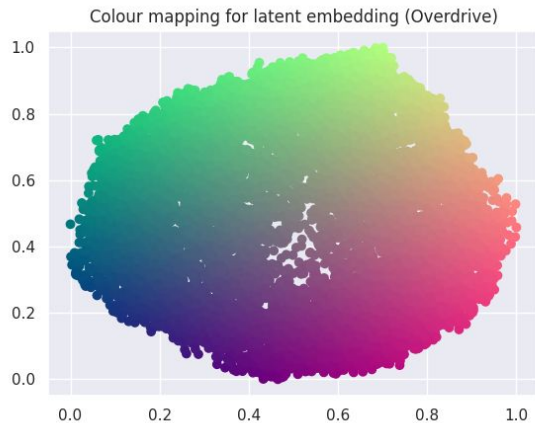
β = 2.0

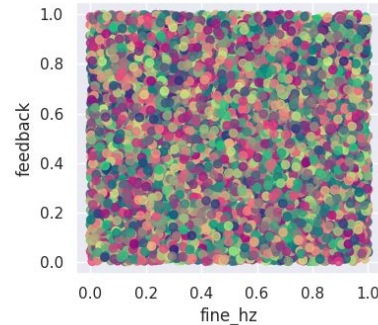# Domain Colouring (Overdrive)

Colour mapping for latent embedding (Overdrive)

Overdrive param pair-plots

β = 0.05

Domain Colouring (Overdrive)

Colour mapping for latent embedding (Overdrive)

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Domain Colouring (RingMod)

Colour mapping for latent embedding (RingMod)

RingMod param pair-plots

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Domain Colouring (RingMod)

Colour mapping for latent embedding (RingMod)

RingMod param pair-plots
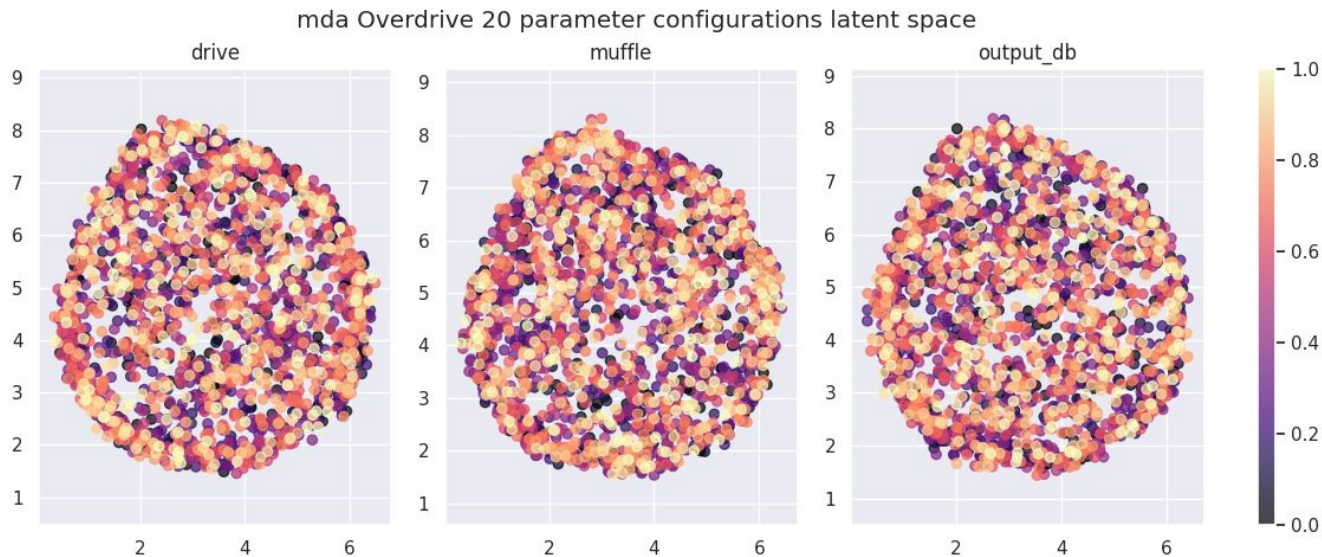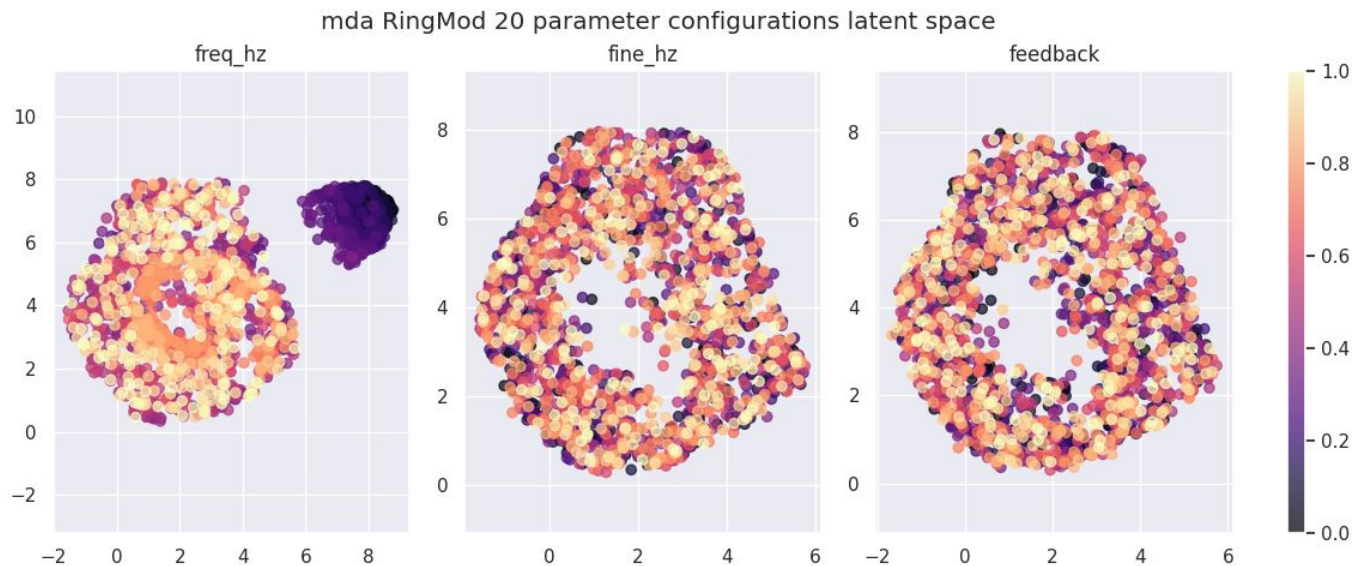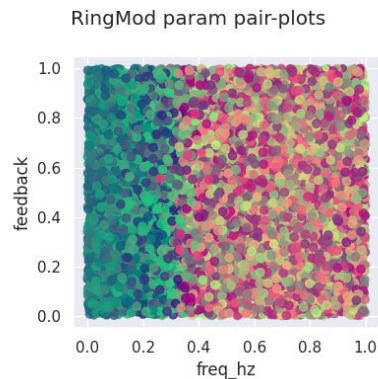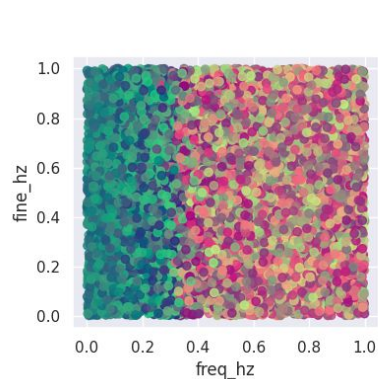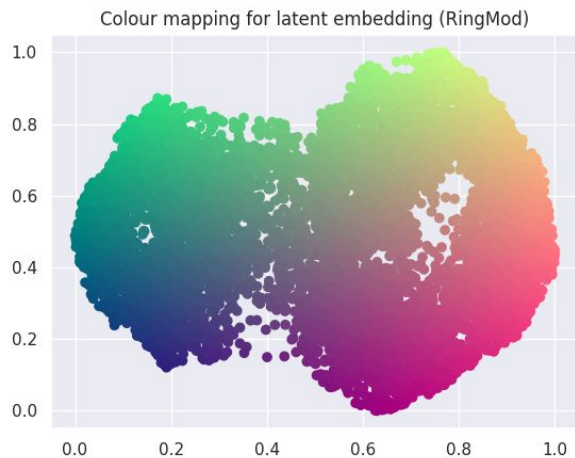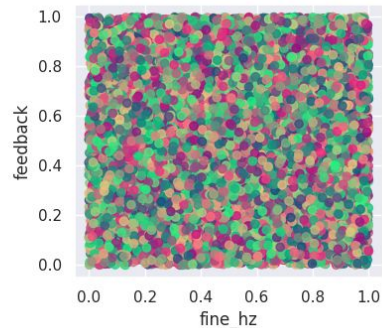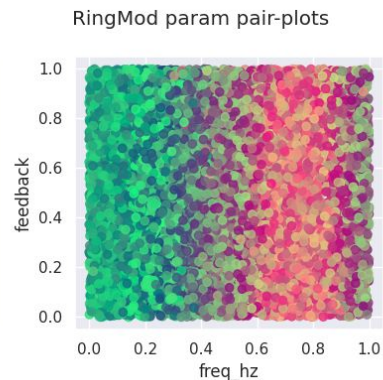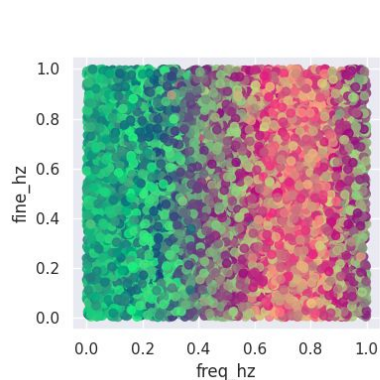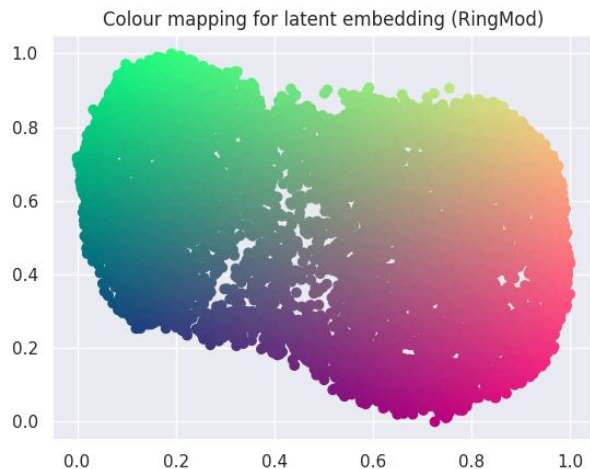
β = 2.0

Questions

- Do you have any feedback on the evaluation plan?
- I'm considering where to put the bottleneck in end-to-end network for low-dimensional parameter control. Thinking of using UMAP on the VAE latent space since this should be well structured. Do you think think is a sensible idea?
- Current structure of embeddings don't look great - however, with the amount of time left in the project do you think it would be better to just go with what I have, rather than further debugging of the VAE?

Plan for next week

- Train end-to-end networks with each of the 4 seen effects as well as 3 unseen effects.
- Implement low-dimensional parameter adjustment latent space.
- Start preparing scripts for evaluation.
- Continue report writing.

Where I am in schedule

- Having an evaluation plan has helped me get a picture of what work is left to be done in the project.
- Would like to get end-to-end training/analysis and low-dimensional control space implementation in the next 2 weeks, so I can have time for evaluation.