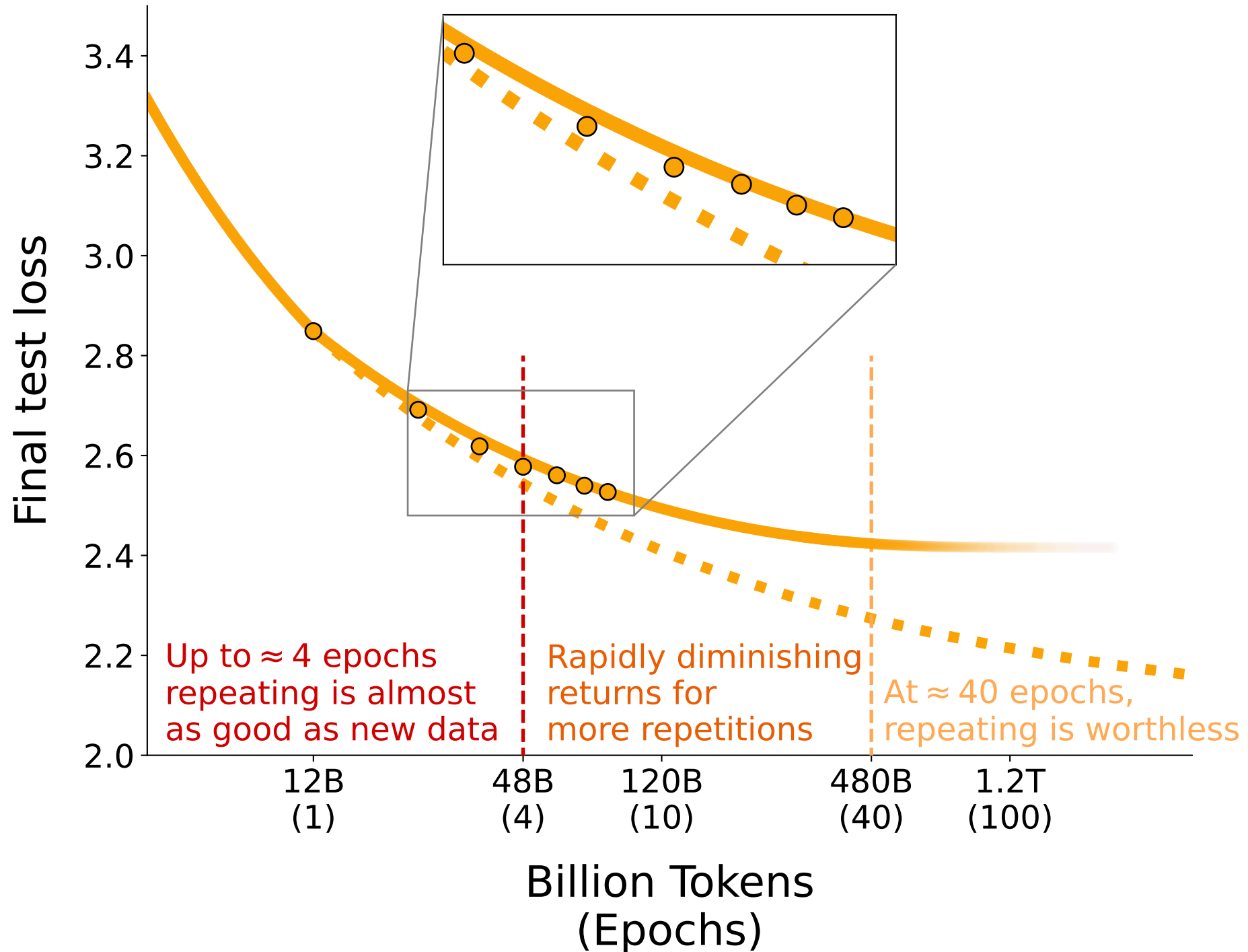
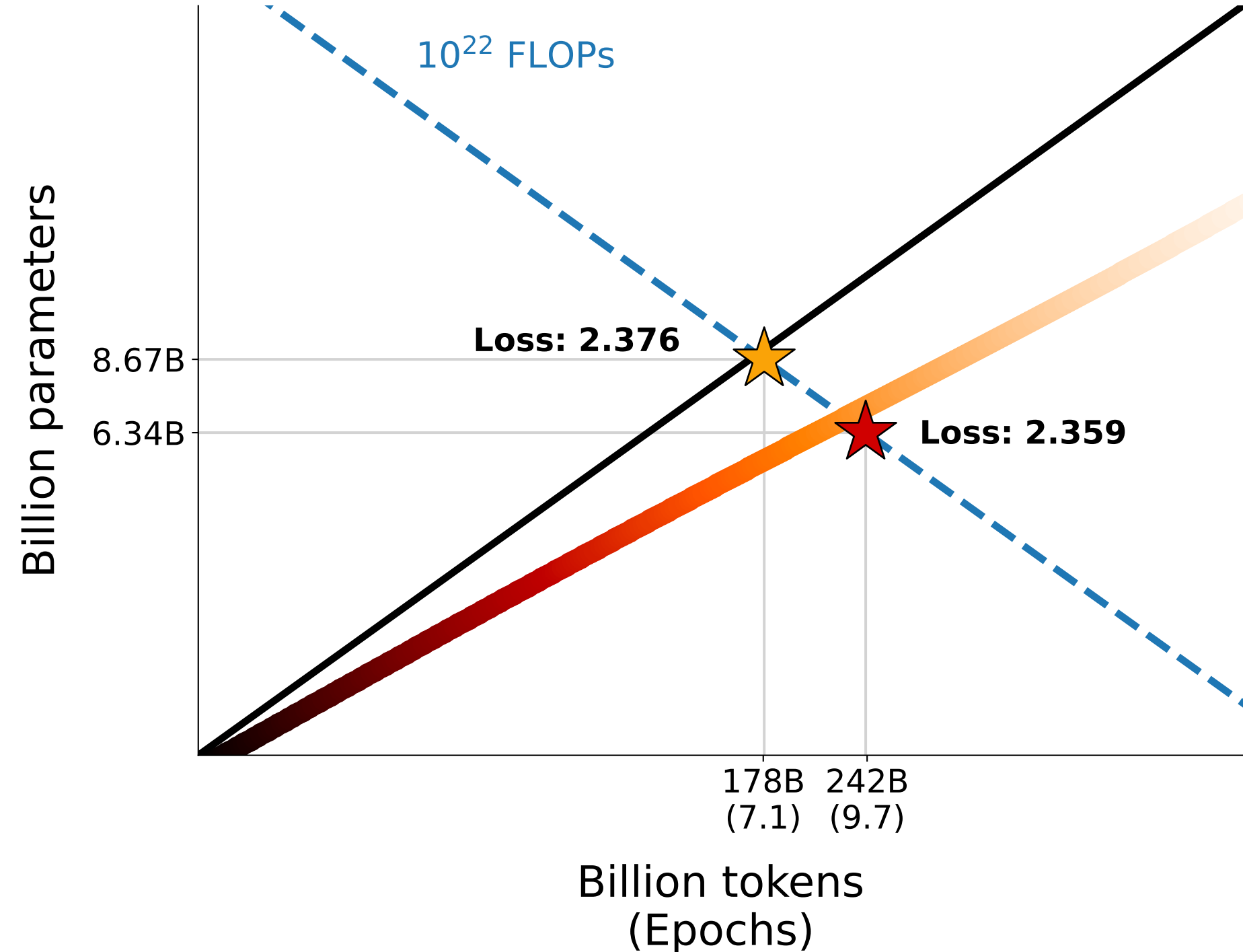


Data-Constrained Scaling Laws

Return on compute when repeating



Allocating compute when repeating



- ★ Models trained
- ■ ■ Loss assuming repeated data is worth the same as new data
- Loss predicted by our data-constrained scaling laws

- Regime of same compute (IsoFLOP)
- Efficient frontier assuming repeated data is worth the same as new data
- Efficient frontier predicted by our data-constrained scaling laws