

Write Amplification: Problem der B-Bäume



LSM Log Structured Merge Tree

Kapazität $k \cdot k \cdot M$

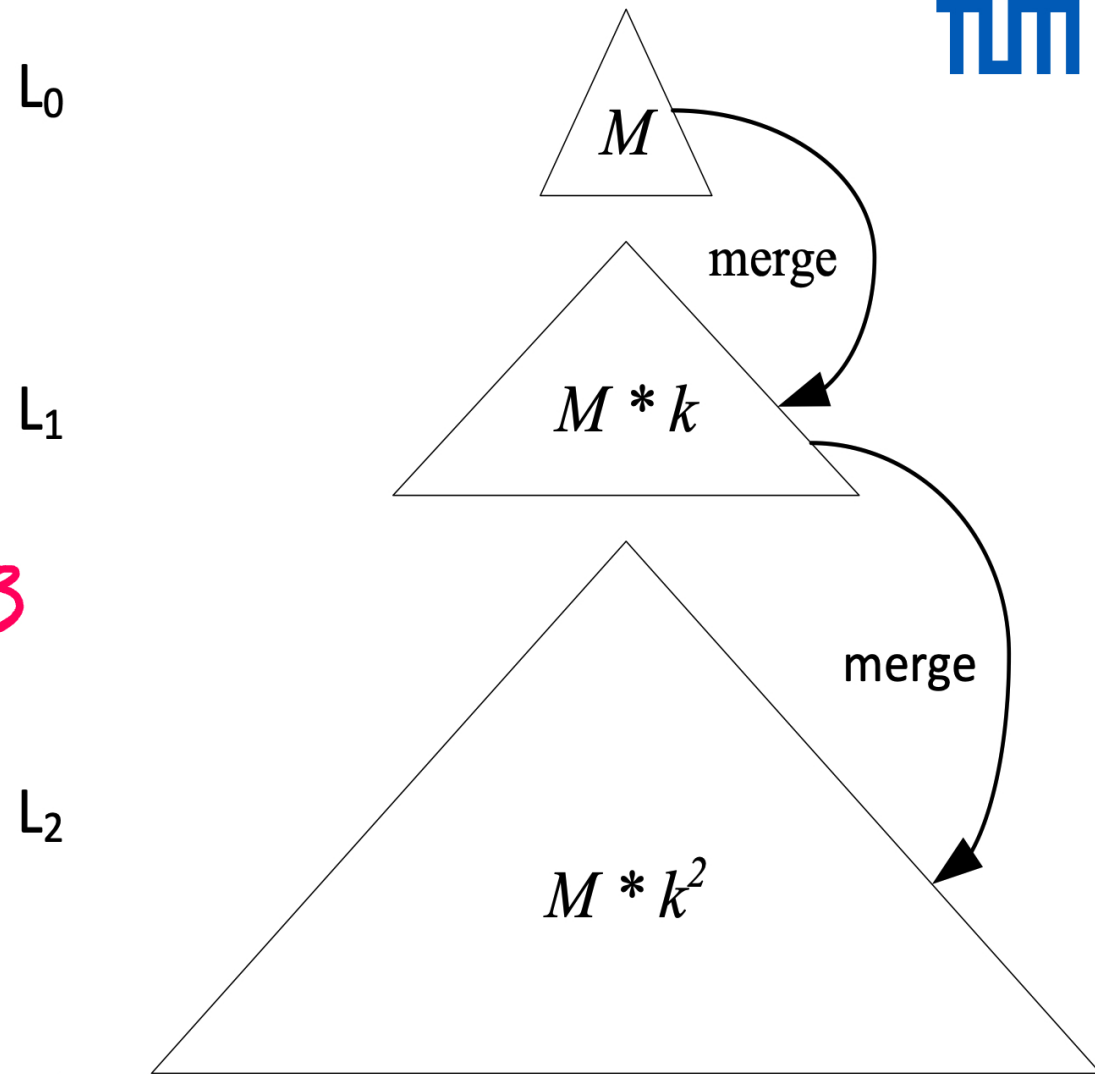
$$r = \log_k (\overset{\text{DB-Größe}}{I/M})$$

$$r = \log_5 (I/M) = \log_5 (100) = 3$$

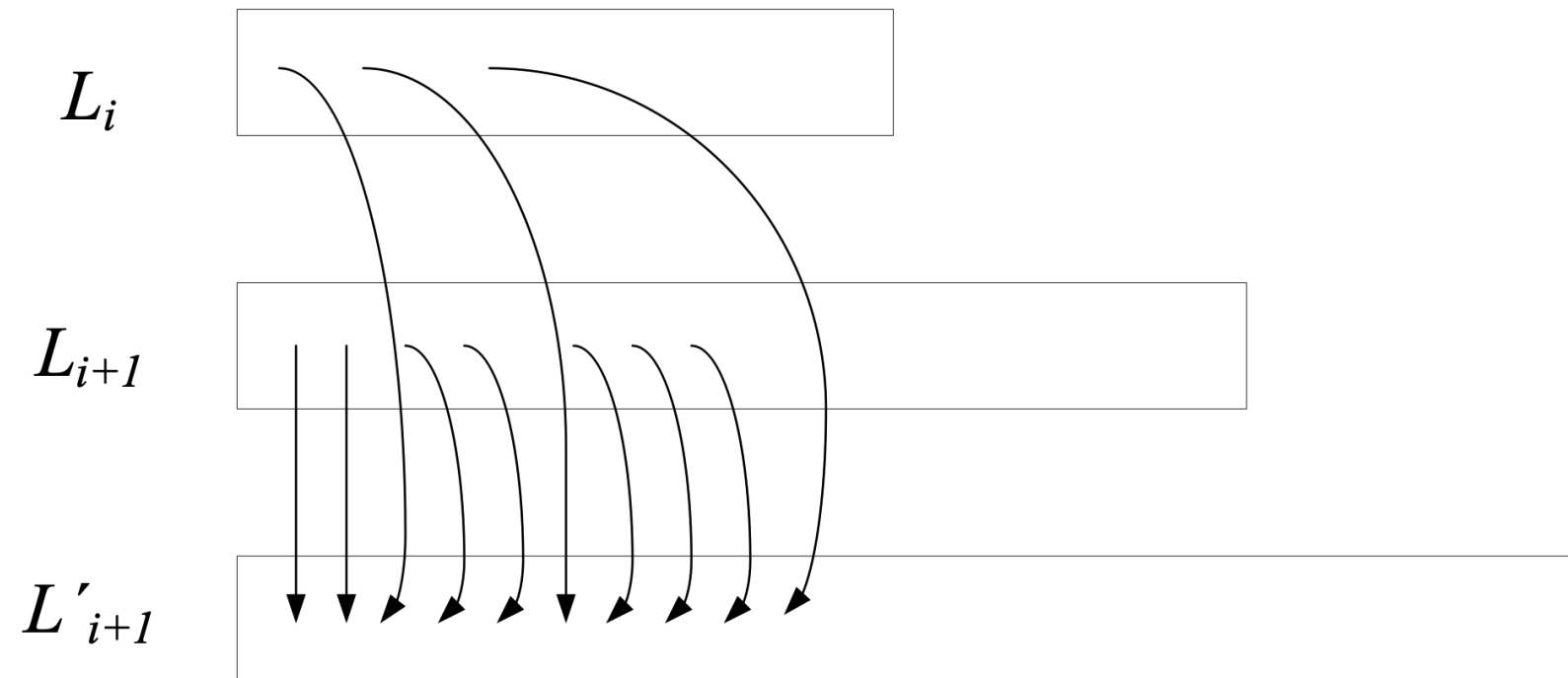
jedes Datum wird $k/2$
mal pro Level geschrieben

$$\text{Also: } k/2 \cdot 2 \cdot \log_k (I/M)$$

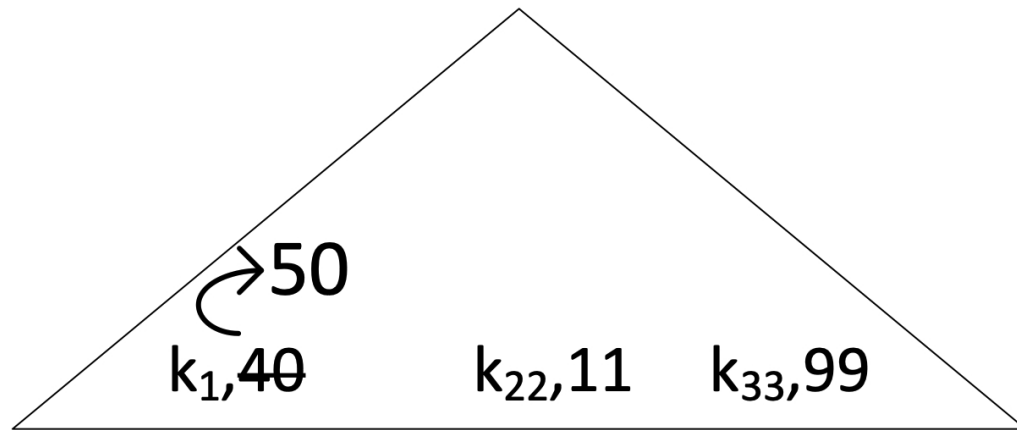
$$I \geq 100 \cdot M, k=5 \Rightarrow \text{Amplification } w = 20$$



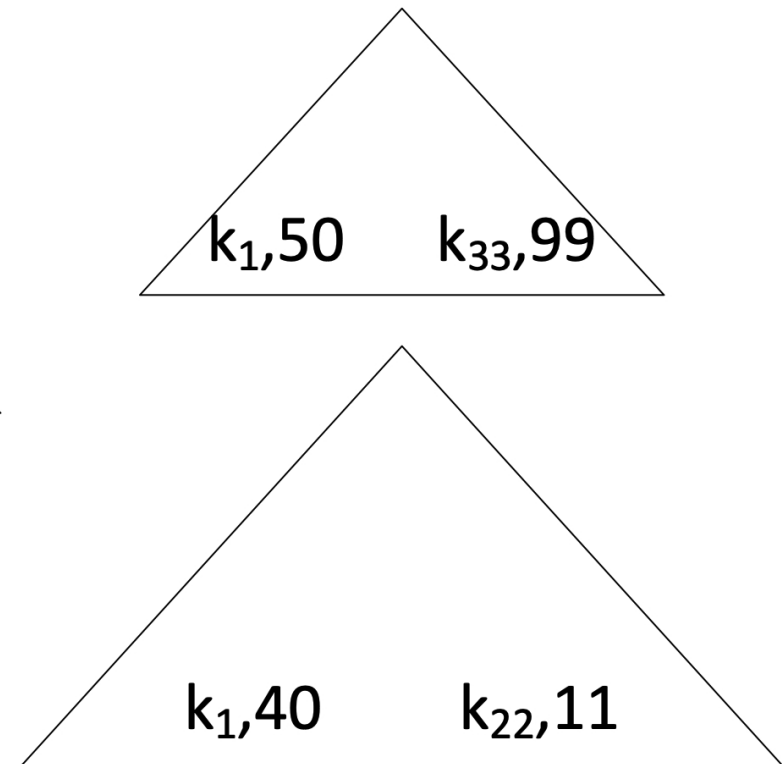
Merge beim „Data Staging“

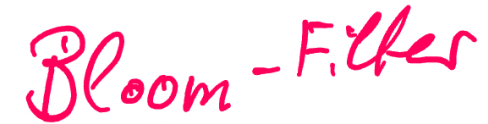


B⁺-Baum



LSM





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Levelling mit Bereichspartitionierung

