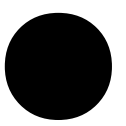
VoiceFixer

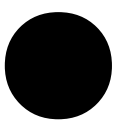
TFGAN Vocoder - Training - Time Domain losses



Loss

Function:

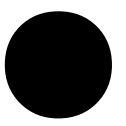
$$L_{syn} = L^T + L^F + \lambda_1 L^D$$

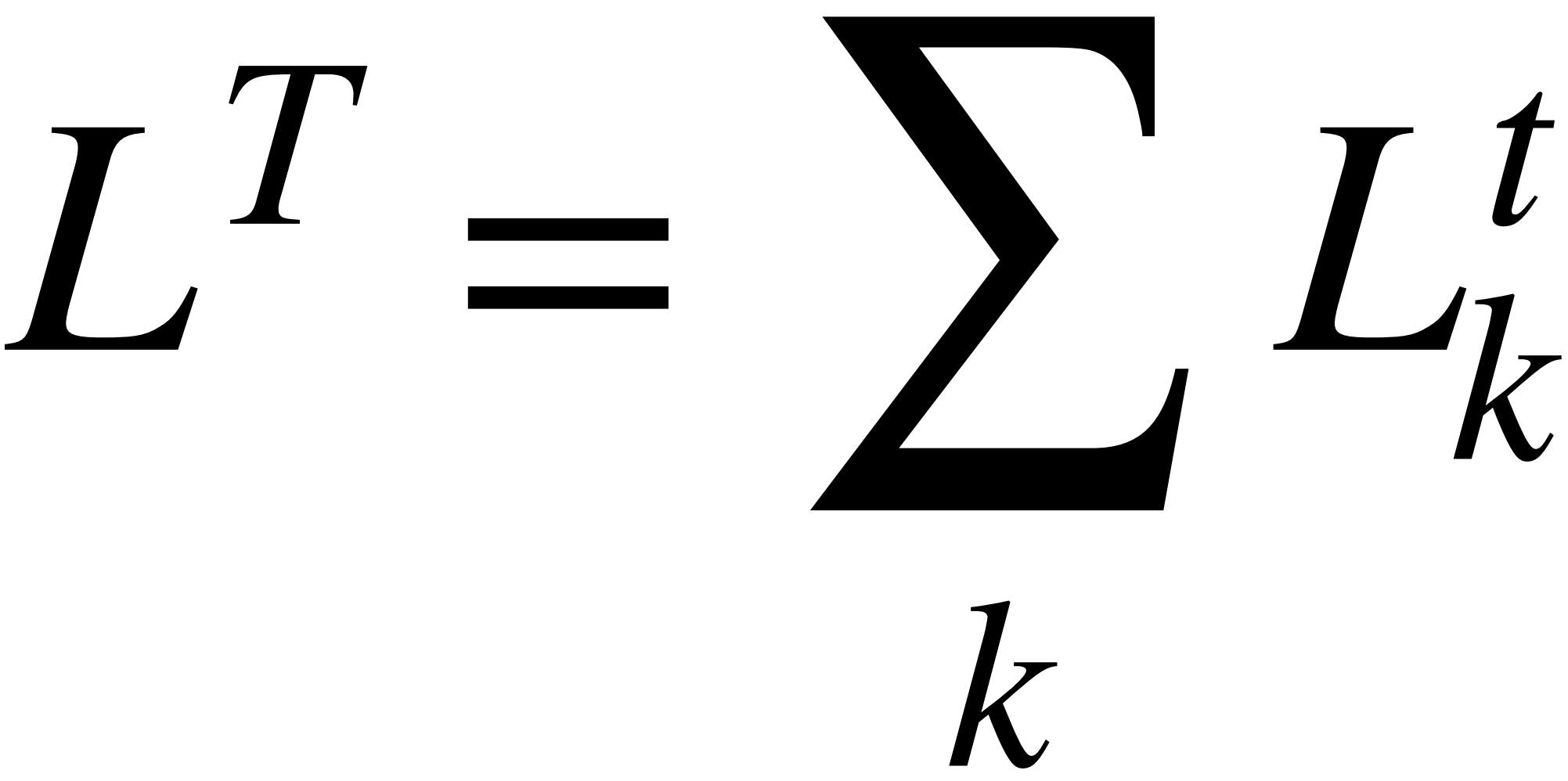


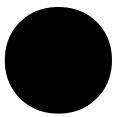
Time

Domain

Losses:







$$L_k^t(\hat{s}, s) = \lambda_5 L_k^{energy}(\hat{s}, s) + \lambda_6 L_k^{phase}(\hat{s}, s) + \lambda_7 L_k^{time}(\hat{s}, s)$$

k	1	2	3	4
frame-length	1	240	480	960
hop-length	1	120	240	480

Table.3 Windowing parameter for each k

Vocoder

Training

losses


TFGAN

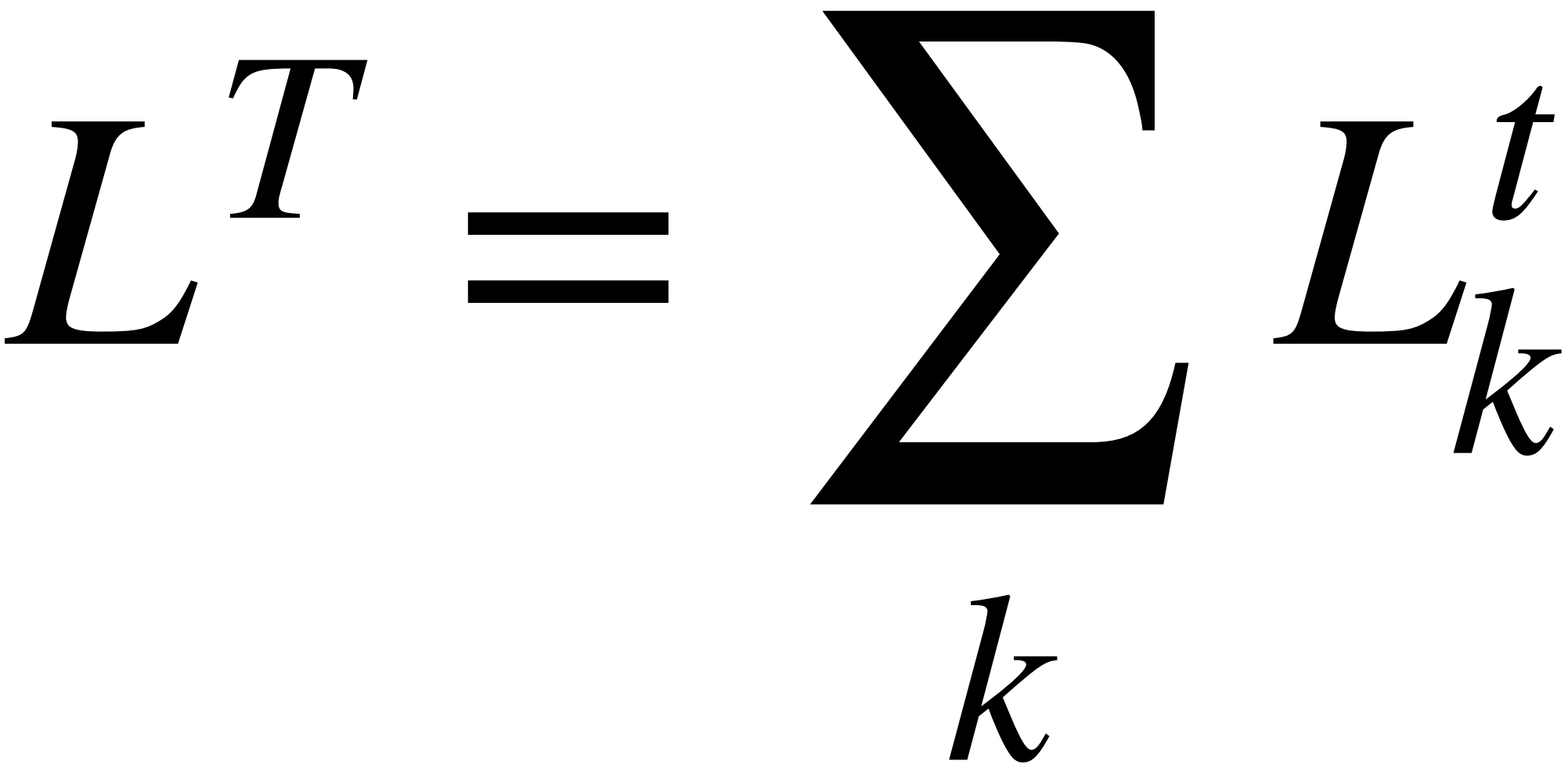
Domain


Time

- Loss

- Time

$$L_{syn} = L^T + L^F + \lambda_1 L^D$$



$$L_k^t(\hat{s}, s) = \lambda_5 L_k^{energy}(\hat{s}, s) + \lambda_6 L_k^{phase}(\hat{s}, s) + \lambda_7 L_k^{time}(\hat{s}, s)$$

information:

- Capture

o Loss

- Time


phase

metallic


loss

loss:

sample:

mean


energy

is

- Remove

on

the

loss,


energy


and


effect:


time

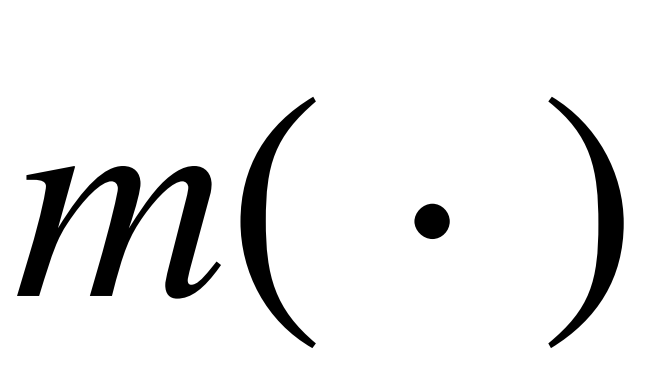
function

$$L^{time}(\hat{s}, s) = \left\| v(\hat{s}) - v(s) \right\|_1$$

$$L^{energy}(\hat{s}, s) = \left\| v(\hat{s}_w^{\,2}) - v(s_w^2) \right\|_1$$

$$L^{phase}(\hat{s}, s) = \left\| \Delta v(\hat{s}_w^{\,2}) - \Delta v(s_w^2) \right\|_1,$$

$$v(s)_{1\times w} = (m(s_0), m(s_1), \ldots, m(s_w))$$



parameter

Table.3

Windowing

for

each

Losses:

- Loss

Domain

Function:

- Time