

## 1 · DETECT FIELD ORDER (TFF vs BFF)

Inspect the source before choosing a filter. The wrong parity produces jittery output.

```
# Quick container probe
ffprobe -v error -select_streams v:0 \
  -show_entries stream=field_order,codec_name,r_frame_rate input.ts

# Sample-based detection (more reliable than the container flag)
ffmpeg -i input.ts -vf idet -frames:v 200 -an -f null - 2>&1 | grep Parsed_idet
```

Container flag values: tt = top first, bb = bottom first, progressive = no deinterlace needed.

idet output: 'TFF' or 'BFF' wins by count after 200 frames. Trust the sample probe over the flag.

## 2 · BWDIF — PRODUCTION DEFAULT

Motion-adaptive, examines past + current + future frames. Best general-purpose choice.

```
# Same frame rate output (1080i25 -> 1080p25), TFF source
ffmpeg -i in.ts -vf 'bwdif=mode=send_frame:parity=tff' \
  -c:v libx264 -preset slow -crf 18 -c:a copy out.mp4

# Double frame rate output (1080i25 -> 1080p50), each field becomes a full frame
ffmpeg -i in.ts -vf 'bwdif=mode=send_field:parity=tff' \
  -c:v libx264 -preset slow -crf 18 -c:a copy out.mp4
```

mode=send\_frame keeps frame rate. mode=send\_field doubles it (best motion fidelity).

parity=auto only when you've verified the source is consistent. Otherwise force tff or bff.

## 3 · YADIF — FALLBACK / OLDER PIPELINES

Lighter than BWDIF. Use when you're on a fixed pipeline or CPU-constrained ingest.

```
ffmpeg -i in.ts -vf 'yadif=mode=send_frame:parity=tff:deint=all' \
  -c:v libx264 -preset slow -crf 18 -c:a copy out.mp4
```

deint=all forces every frame through the filter. deint=interlaced skips frames already marked progressive.

## 4 · QTGMC — ARCHIVAL / RESTORATION (VapourSynth)

Motion-compensated. Highest quality available. CPU/GPU heavy. Used through VapourSynth, piped to FFmpeg.

```
# clip.vpy
import vapoursynth as vs
from havsfunc import QTGMC
core = vs.core
src = core.ffms2.Source('in.ts')
out = QTGMC(src, Preset='Slow', TFF=True, FPSDivisor=2) # FPSDivisor=2 keeps source fps
out.set_output()

# Run: vspipe clip.vpy - | ffmpeg -i pipe: -c:v libx264 -preset slow -crf 18 out.mp4
```

Presets: Draft / Fast / Medium / Slow / Slower / Placebo. Slow is the production sweet spot.

FPSDivisor=1 doubles frame rate (best motion); =2 keeps source rate (smaller files).

## 5 · COMMON MISTAKES TO AVOID

### DOUBLE DEINTERLACING

Capture deinterlaces, transcode deinterlaces again. Soft, smeared output. Pick one stage, label it.

### WRONG PARITY

TFF filtered as BFF (or vice versa) jitters in a 'broken time' way. Probe a 5-second sample first.

### NO DEINTERLACE AT ALL

Interlaced fields fed straight into H.264/HEVC/AV1 bake combing into every motion frame.