

CLAIMS

1. A method of processing video data, comprising:
 - determining, that a non-linear filtering operation is applied for a current video region of a video;
 - deriving at least one first filtering index for the current video region;
 - deriving one or more first clipping parameters from a clipping parameter set based on the at least one first filtering index;
 - performing a clipping operation which is part of the non-linear filtering operation; and
 - performing a conversion between the current video region and a bitstream of the video based on the clipping operation;
 - wherein the clipping parameter set is constructed based on a bit-depth.
2. The method of claim 1, wherein a shifting operation is used for deriving clipping parameter values of the clipping parameter set.
3. The method of claim 1 or 2, wherein the clipping parameter set is constructed further based on a clipping index.
4. The method of claim 3, wherein the clipping index is associated with a field in the bitstream.
5. The method of claim 3 or 4, wherein the clipping index is determined using a pre-defined rule.
6. The method of any of claims 3-5, wherein for the clipping parameter set, different clipping parameter values are used for different bit-depth under a given value of the clipping index.
7. The method of any of claims 3-6, wherein a first clipping parameter value corresponding to a first clipping index for a given bit-depth is derived based on a second clipping parameter value corresponding to the first clipping index for another bit-depth.

8. The method of claim 7, wherein the first clipping parameter value is derived based on applying a shifting operation on the second clipping parameter value.
9. The method of any of claims 1-8, wherein the at least one first filtering index is derived based on multiple sample differences in different directions.
10. The method of claim 9, wherein the current video region is split into multiple $M \times M$ video region, and the multiple sample differences in different directions are derived for every $M \times M$ video sub-region, and wherein M is equal to 2 or 4, and wherein the current video region is a coding tree block or a slice.
11. The method of claim 10, wherein the multiple sample differences in different directions are derived based on $1:N$ subsampling rate, wherein N is great than 1.
12. The method of any of claims 1-11, wherein one or more first filtering parameters are further derived based on the at least one first filtering index.
13. The method of claim 12, wherein the one or more first filtering parameters and the one or more first clipping parameters are derived based on a same adaptation parameter set identification.
14. The method of any of claims 1-13, wherein the conversion includes encoding the current video region into the bitstream.
15. The method of any of claims 1-13, wherein the conversion includes decoding the current video region from the bitstream.
16. An apparatus for processing video data comprising a processor and a non-transitory memory with instructions thereon, wherein the instructions upon execution by the processor, cause the processor to:

determine, that a non-linear filtering operation is applied for a current video region of a video;
derive at least one first filtering index for the current video region;
derive one or more first clipping parameters from a clipping parameter set based on the at least one first filtering index,
perform a clipping operation which is part of the non-linear filtering operation; and
perform a conversion between the current video region and a bitstream of the video based on the clipping operation;
wherein the clipping parameter set is constructed based on a bit-depth.

17. The apparatus of claim 16, wherein a shifting operation is used for deriving clipping parameter values of the clipping parameter set.

18. The apparatus of claim 17, wherein for the clipping parameter set, different clipping parameter values are used for different bit-depth under a given value of the clipping index.

19. A non-transitory computer-readable storage medium storing instructions that cause a processor to:

determine, that a non-linear filtering operation is applied for a current video region of a video;
derive at least one first filtering index for the current video region;
derive one or more first clipping parameters from a clipping parameter set based on the at least one first filtering index,
perform a clipping operation which is part of the non-linear filtering operation; and
perform a conversion between the current video region and a bitstream of the video based on the clipping operation;
wherein the clipping parameter set is constructed based on a bit-depth.

20. A non-transitory computer-readable recording medium storing a bitstream of a video which is generated by a method performed by a video processing apparatus, wherein the method comprises:

determining, that a non-linear filtering operation is applied for a current video region of a video;

deriving at least one first filtering index for the current video region;

deriving one or more first clipping parameters from a clipping parameter set based on the at least one first filtering index,

performing a clipping operation which is part of the non-linear filtering operation; and

generating a bitstream of the video based on the clipping operation;

wherein the clipping parameter set is constructed based on a bit-depth.