m55952
Simplification of determining process of projection plane in Trisoup

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Overview

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Problem statement

- In the current Trisoup implementation, projection plane is determined by calculating a variance of vertex positions.
- Square operation is needed for each Trisoup node at decoder.

Proposal

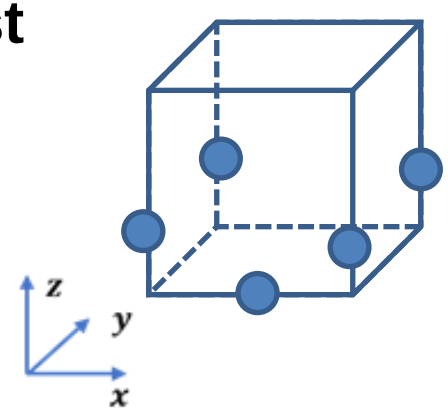
- Simplified method is proposed.
- Difference between the max. value and the min. value of vertex positions are used instead of variance.

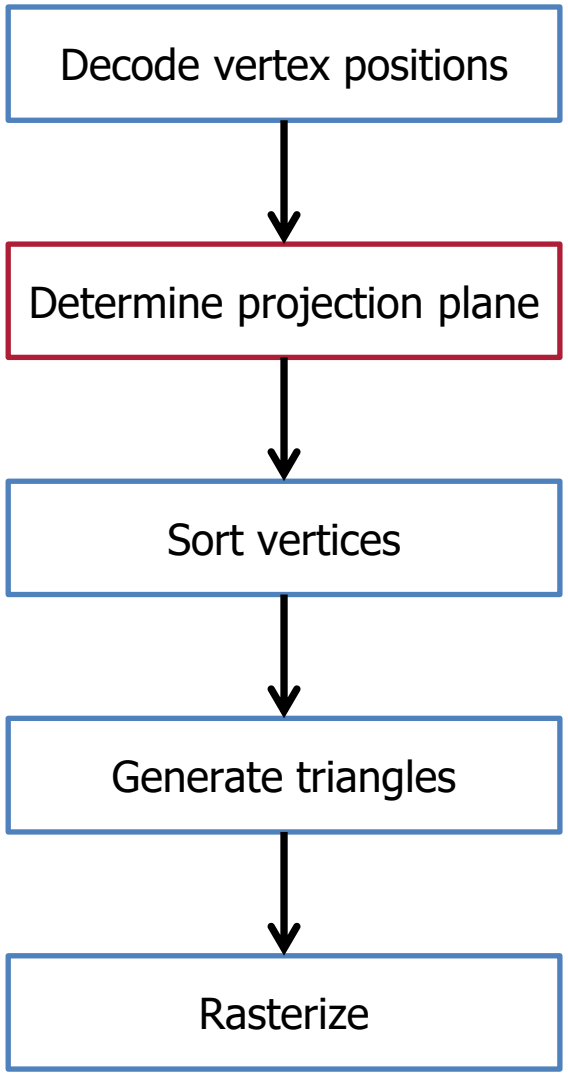
Experimental results

- BD-rates for geometry are -0.1%, 0.2% (D1, D2).

Problem Statement

- **Projection plane needs to determined for each Trisoup node.**
- **Current determining process**
  - **Calculate the variance of vertex positions for each axis.**
  - **Determine projection plane defined by axes that have lager variance (e.g. ignore an axis that has the min. variance).**
- **Variance needs square operations.**
- **It seems to be too much computation cost for the purpose.**





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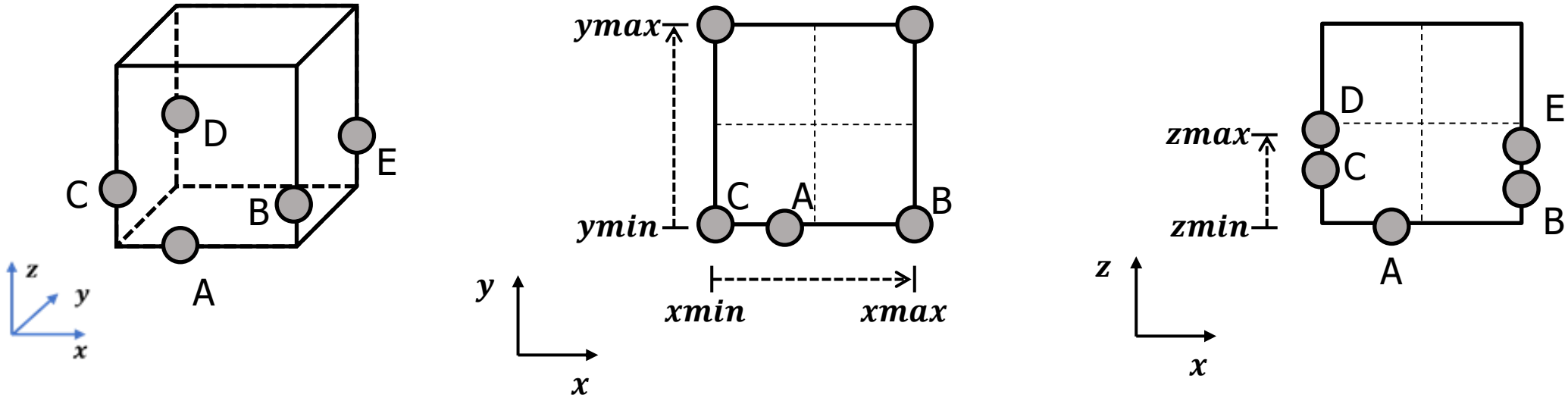

Experimental results

Conditions

- Anchor : TMC13-v12.0
- Trisoup – RAHT (Only C2 condition, Cat1 Sequences)

Results

- BD-rates for geometry are -0.1%, 0.2% (D1, D2).
- Impact of the proposed simplification is very minor.

C2_ai	lossy geometry, lossy attributes [all intra]					
	End-to-End BD-AttrRate [%]				Geom. BD-TotGeomRate [%]	
	Luma	Chroma Cb	Chroma Cr	Reflectance	D1	D2
Cat1-A average	-0.1%	-0.2%	-0.3%		-0.2%	0.1%
Cat1-B average	0.1%	0.2%	0.5%		-0.1%	0.4%
Cat3-fused average	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Cat3-frame average				#DIV/0!	#DIV/0!	#DIV/0!
Overall average	0.0%	0.0%	0.1%	#DIV/0!	-0.1%	0.2%
Avg. Enc Time [%]	100%					
Avg. Dec Time [%]	100%					

Conclusion

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Recommendation

- The proposal is adopted to the next version of the test model.