

PERCEPTUAL ADAPTATION OF IMAGE  
BASED ON CHEVREUL-MACH BANDS  
VISUAL PHENOMENON

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# ABSTRACT

- The Perceptual Adaptation of the Image (PAI) is introduced by inspiration from Chevreul-Mach Bands (CMB) visual phenomenon.
- By boosting the CMB assisting illusory effect on boundaries of the regions, PAI adapts the image to the perception of the human visual system (HVS) and thereof increases the quality of the image.
- PAI is proposed for application to standard images or the output of any image processing technique. For the implementation of the PAI on the image, an algorithm of morphological filters (MFs) is presented which geometrically adds the model of CMB effect



# EXISTING SYSTEM

- VISUAL illusive phenomenon's have been extensively studied for a better understanding of perception mechanism of the human visual system (HVS) .
- A comprehensive list of visual illusions has presented in Ref. where the reasons behind them have been explained.
- Having the ground of assisting view to visual illusions instead of HVS mistakes, Chevreul-Mach Bands (CMB) illusion inspires the authors in shaping the foundation of the Perceptual Adaptation of the Image (PAI) to the HVS.



# PROPOSED SYSTEM

- Numerical evaluation by improvement ratios of four no-reference image quality assessment (NR-IQA) indexes approves PAI performance where it can be noticeably observed in visual comparisons.
- Furthermore, PAI is applied as a post-processing block for Classical morphological filtering, weighted morphological filtering, median morphological filtering in cancellation of Salt & Pepper, Gaussian and Speckle noise from MRI images,
- where the above specified NR-IQA indexes validate it. PAI effect on image enhancement is benchmarked upon morphological image sharpening and high-boost filtering



# HARDWARE REQUIRMENT

- Processor - Intel
- Speed - 1.1 Ghz
- RAM - 256 MB(min)
- Hard Disk - 20 GB
- Monitor - SVGA

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# SOFTWARE REQUIREMENT

- Tool - MATLAB R2012
- Operating system - Windows Xp, 7

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# REFERENCES

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