LAB 4
PRNU

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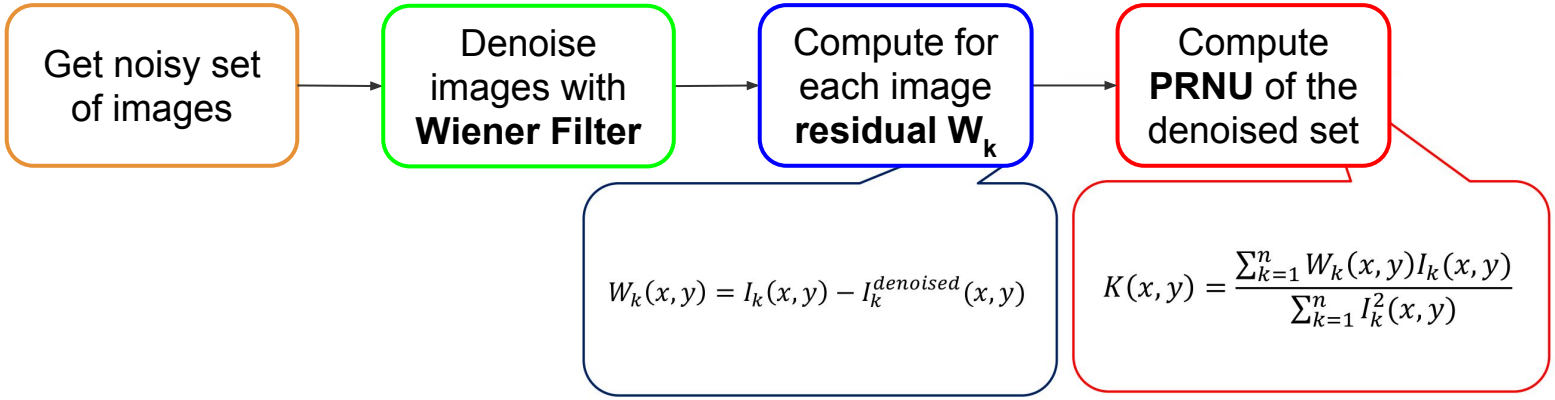
Photo Response Non-Uniformity

Reference code: testPRNU.m
Some hints:

- Recall the formula: sensor noise pattern **K**, multiplicative factor γ and additive noise **N**

$$I(x,y) = I_0(x,y)+I_0\gamma(x,y)\mathbf{K}(x,y)+\mathbf{N}(x,y)$$

- Steps to compute PRNU:



- Compute correlation of test images with PRNUs using **corr2(I_k .* PRNU, W)**

Expected results

Obtained for GREEN channel, and wiener2 parameters [5, 5]

	CanonIxus70	NikonD70	Pentax	SonyH50
Canon1	0.025417	0.02175	0.024976	0.024563
Canon2	0.019058	0.017244	0.016834	0.018483
Nikon1	0.012065	0.017455	0.010981	0.015295
Nikon2	0.033496	0.051035	0.050146	0.039819
Pentax1	0.03654	0.068808	0.090917	0.054583
Pentax2	0.016995	0.033467	0.036164	0.030833
Sony1	0.026574	0.038729	0.042971	0.044566
Sony2	0.015492	0.019857	0.021796	0.049831

Tests

- Try changing the denoising filter (e.g **medfilt2()**, **imgauss()**, …)
- Try to change the color chanel
- Use tampered images and check the manipulated area localization
- Test robustness, especially against JPEG compression