

快速影像式自動對焦技術研究

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摘要

The paper proposes a fast image based auto focus technique. By applying the lens architecture, depth of field can be estimated by computing the image clarity based on modulation transfer method. Based on coarse to fine strategy, we first compute the image contrast and sharpness and estimate the lens depth of field by focus searching method. Then, we can find the accurate focus position via finely calculating the image clarity in searching area of depth of field. Instead of image differential or gradient method, modulation transfer method can avoid the local maximum problem in image clarity computation. By finding the maximum image contrast in the searching area of depth of field, we can find the true focus point based on modulation transfer method. From the experiments, it is proved that the paper proposed a more accurate and fast auto focus method compared with the other traditional ones.

關鍵字 : Lens Resolution, Auto Focus, Modulation Transfer Method, Depth of Field, Clarity, Contrast