is its determinant. Now, the determinant is an irreducible polynomial and $|D(\zeta)| = 1$. Hence the following theorem.

THEOREM 4. *If $f(z_{rs})$ is defined holomorphic over the entire matrix space, then it has absolute value* 1 *on the unitary set* (6) *if and only if*

$$f(z) = e^{i\alpha}(\det | z_{rs} |)^p$$

for some integer $p \geqq 0$.

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ON A CRITERION FOR DETERMINATE MOMENT SEQUENCES

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On page 20 of [**4**], the following criterion is given as sufficient for the determinacy of a Hamburger moment sequence $\{\mu_n\}$:

$$\liminf \left(\mu_{2n}^{1/2n}/n^2\right) < \infty. \tag{1}$$

Attributed to Perron [**2**], it is obtainable only by transforming a criterion for Stieltjes determinacy due to Perron. In doing so, I find (1) not to follow from Perron's result. In this note, I shall make the proper correction to eliminate confusion caused by the error (e.g., (1) if valid would be more general than Carleman's well known criterion [**1**]). I also give an example to show that (1) is invalid.

Symmetrization of all mass distributions with the moments μ_n shows that $\{\mu_n\}$ is determinate provided that there is no more than one symmetric distribution with the moments $\mu_0, 0, \mu_2, 0, \cdots$. But the latter condition is easily shown to be equivalent to Stieltjes determinacy of the moment sequence $\{\mu_{2n}\}$ (not the same as Hamburger determinacy of $\{\mu_{2n}\}$ [**4**]).

Perron [**2**] gives as a sufficient condition for Stieltjes determinacy of $\{\mu_{2n}\}$

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$$\liminf \left(\mu_{2n}^{1/n}/n\right) < \infty, \tag{2}$$

from which it is seen that the n^2 in (1) should be replaced by $n^{1/2}$. The resulting criterion is less general than M. Riesz's criterion [3] in which the n^2 is replaced by n. Riesz shows his criterion to be less general than that of Carleman.

None of the above precludes validity of (1). However, $\mu_{2n} = 4(4n+1)!$ satisfies (1) and may be realized with the mass distribution $\exp(-|t|^{1/2})dt$, known [4] to yield indeterminate moments.

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