Journal Name, 2001, Vol. 00, pp. 1–3
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(Received: on January 10 2001, Revised: on February 20, 2001)

Mittelwaldwirtschaft ist eine historische Waldnutzungsform, die über Jahrhunderte zur gleichzeitigen Produktion von Brenn- und starkem Bauholz betrieben wurde. Die Existenz von Schlagflächen unterschiedlichen Alters sowie die Zweischichtigkeit des Bestandes führten zu einer vielfältigen Waldstruktur. Untersucht wurde eine Mittelwaldfläche von insgesamt etwa 75 ha in einem Waldgebiet nordöstlich der Stadt Neubrandenburg mit 100 bis 200-jährigen Stieleichen in der Ober- und einem hohen Bestand von Haselsträuchern in der Unterschicht. Um die in Mecklenburg-Vorpommern selten so gut erhaltene Mittelwaldstruktur zu erhalten, sollte die schlagweise Nutzung wieder aufgenommen werden.

Keywords: Alternative; Resistance; Welding; Lasers.

1. INTRODUCTION

This exposure in the side-seam needs to be covered by the application of a suitable protective lacquer, and this process is termed side striping. Different types of lacquers are used, depending upon the level of protection and appearance required (see Section 3.2.1.1).

$$b^{x-n+b}4_{1+2}a^2 + c^3 = H^{\frac{a+b}{c-d}}abc^{\frac{1+2+3}{x-y}}\,H_{\frac{a+b}{x-y}}abc_{\frac{1+2+3}{c-d}} \tag{1.1}$$

The precise conditions at the welding point significantly affect the ease with which this internal protection of the weld surface can be achieved during side-striping process. Excessive temperature can cause splashing to occur, which may

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When $|\eta, M\rangle\rangle$ is taken to be the usual binomial state, then A takes the form

$$A_b = \frac{1}{2}[1 + \mathrm{Re}\, e^{i\psi}(1 + (e^{i\phi} - 1)|\eta|^2)^M]^{-1} \tag{4}$$

In the limit ($M \to \infty$, $\eta \to 0$ such that $M|\eta|^2 = |\alpha|^2$) Eq. (4) tends to

$$\bar{A}_b = \frac{1}{2}[1 + \{\cos(\psi + |\alpha|^2 \sin\phi)\}e^{|\alpha|^2(\cos\phi - 1)}]^{-1} \tag{5}$$

It is clear from the definition of $|\chi\rangle$ that when $\psi = 0$ and $\phi = \pi l$, $l = 1, 3, 5, \ldots$ then the state (2) reduces to even-binomial state [12], while it reduces to odd binomial state [13] when $\phi = \psi = \pi s$, $s = 1, 3, 5, \ldots$. However in what follows we shall take $|\eta, M\rangle\rangle$ to represent either an even or an odd binomial state.

The main purpose of the present work is to study the statistical properties of the state $|\chi\rangle$ given by Eq. (2). To do so we shall organize the paper as follows; In Section 2, we study the case when $|\eta, M\rangle\rangle$ stands for the even or the odd binomial state, where we shall take $\phi = \pi/2$ and we call the state in this case a phased orthogonal even or odd binomial state. Also our discussions extends to include the second and the fourth-order moments of squeezing. In Section 3 we calculate the quasiprobability distribution functions for these states. While Section 4 will be devoted to discuss the phase distribution function in the Pegg–Barrnett formalism. We summarize our results in Section 5.

2. PHASED ORTHOGONAL STATES

(i) Even Binomial State

In this section, we consider $\phi = \pi/2$ in the state $|\chi\rangle$ given by (2). In this case $|\eta, M\rangle\rangle$ stands for the state

$$|\eta, M\rangle_e = \lambda \sum_{n=0}^{[M/2]} \sqrt{\binom{M}{2n}} \eta^{2n}(1 - |\eta|^2)^{(M-2n)/2}|2n\rangle \tag{6}$$

representing the usual even binomial state, then the definition (2) reduces to

$$|\chi\rangle_e = A_e^{1/2}[|\eta, M\rangle_e + e^{i\psi}|i\eta, M\rangle_e] \tag{6'}$$

It is clear that

$$\begin{aligned}\langle\eta, M|i\eta, M\rangle_e &= |\lambda|^2 \sum_{n=0}^{[M/2]} \binom{M}{2n} (i|\eta|^2)^{2n}(1-|\eta|^2)^{M-2n} \\ &= |\lambda|^2 \mathrm{Re}[1+(i-1)|\eta|^2]^M\end{aligned} \tag{7}$$

and then the normalization constant A_e, becomes

$$A_e = \frac{1}{2}\{1 + |\lambda|^2 \cos\psi \mathrm{Re}\,[1+(i-1)|\eta|^2]^M\}^{-1} \tag{8}$$

where λ is the normalization constant for the even binomial state given by [12],

$$|\lambda|^2 = 2[1+(1-2|\eta|^2)^M]^{-1} \tag{9}$$

It is known that, the even binomial state tends to the even coherent state if we take the limit, $M \to \infty$, and $\eta \to 0$ such that $M|\eta|^2 = |\alpha|^2$. In this case we find that Eq. (8) takes the form

$$\bar{A}_e = \frac{1}{2}\cos\mathrm{h}|\alpha|^2[\cos\mathrm{h}|\alpha|^2 + \cos\psi\cos|\alpha|^2]^{-1} \tag{10}$$

For $\psi = 0$ Eq. (10) is exactly Eq. (5) of Ref. [4], and the state $|\chi\rangle_e$ reduces to the orthogonal-even coherent state. Thus we can regard our results as a generalization to those of Ref. [4].

A. Second and Fourth Order Squeezing

In the following, we shall employ the Hong–Mandel definition [5], to study the second and the fourth order squeezing. Using the state $|\chi\rangle_e$, we may calculate the expectation values for different field operators. It is clear that

$$\langle a\rangle_e = \langle a^\dagger\rangle_e = 0, \tag{11}$$